DOCTORAL THESIS

The role of employers' organisations and trade unions in the development of climate change policy : a European perspective

Glynn, Peter

Award date:
2014

The role of employers' organisations and trade unions in the development of climate change policy

A European perspective

Presented by

Peter J Glynn

Submitted in total fulfilment of the requirements of the degree of

Doctor of Philosophy

Faculty of Business

Bond University

Australia

Abstract

This research focuses on the role of employers' organisations and trade unions in the United Kingdom and the European Union in the development of climate change policy. The research was stimulated by the debate among stakeholders about the impacts of climate change policy on industry and its links to the labour market, and concerns that those impacts must be reflected in plans for the labour market if business is to continue to grow and if the transition to a low carbon economy is to be fair for workers. A mixed-method qualitative research approach has been employed involving analysis of the climate policy process and a case study focusing on the construction and transport sectors in the United Kingdom and European Union.

The study also has employed the theoretical framework of ecological modernisation, which delineates the relationship between the nation-state, the economy and innovation, and civil society in the achievement of environmental outcomes - a theory that is increasingly used to guide public policy development. An important element in ecological modernisation is civil society, which is often directly or by inference a reference to environmental activists. This research addressed what was contended to be a gap in the existing theory by exploring the significance of labour market issues in climate change policy and the role of employers' organisations and trade unions as a further element.

Overall conclusions from the research are that while employers' organisations and trade union organisations serve the needs of their members in an effective and efficient manner in the United Kingdom and European Union, they do not always see climate change policy as a priority. The research has established, however, that employers' organisations and trade unions are an active and effective component of the fabric of civil society in relation to climate change negotiations, making a strong case for ecological modernisation theorists to move beyond the narrow conception of civil society as environmental activists.

It is also concluded that proposals by the state concerning the transition to a low carbon economy are already and will continue to require changes to patterns of production and consumption: changes that will impact the world of work. As the representatives of business and workers, employers' organisations and trade unions should therefore be tasked with the responsibility to ensure that climate policy development and implementation is considerate of the labour market impacts and that it delivers, as well as climate adaptation and mitigation outcomes, a just transition and a trained and efficient workforce.

Declaration

The material in this thesis constitutes work carried out by the candidate unless otherwise stated. The thesis is less than 100,000 words in length, exclusive of tables, figures, bibliography and appendices, and complies with the stipulations set out for the degree of Doctor of Philosophy by the Australian academic standards.

Acknowledgements

I take this opportunity to convey my appreciation for the privilege of being permitted to participate in the PhD program at Bond University, and of the opportunity to undertake the research on a subject that I believe is important for the business community and its workforce. For that I thank James Carlopio for seeding the thought and arranging the introduction to Bond University, and to the University which provided for my every need, including the encouragement that is so important a part of this journey.

I was fortunate to have as supervisors and mentors two very experienced academics, Professor Ros Taplin and Professor Tor Hundloe, who also had an eye for the practical, believing that the research should be relevant to the needs of industry and society. They guided me through the rigours of the academic process and shared their extensive knowledge, making the journey so much less confronting and helping me to deliver a product that benefited greatly from the collaborative approach. In particular, Professor Taplin has made valuable contributions from the beginning and has been very generous with her time and expertise, and often just very kind and patient.

I was also fortunate to have the wisdom and intellect of Dr Krishna Bose, who progressively reviewed and critiqued the research and the concepts that were developed. She also provided a positive energy, congratulating every step I made in this very long process.

This thesis has also benefited by the clinical editing of my daughter, Belinda Glynn, for which I am very grateful.

Finally, I thank the good people I have met along the way who became good friends and an excellent mutual support network: Kay Imukuka, Denise Miller, Abdullah and Nadal.

Contents

List of figures

List of tables

Abbreviations

CBI	Confederation of British Industry
CLUVA	Climate change and Urban Vulnerability Africa
CSO	Civil society organisations
DECC	UK Department of Energy and Climate Change
EESC	European Economic and Social Committee
EM	Ecological modernisation
EMT	Ecological modernisation theory
ETS	Emissions trading system
ETUC	European Trade Union Confederation
GFC	Global financial crisis
GGKP	Green Growth Knowledge Platform
GHG	Greenhouse gas emissions
ICC	International Chamber of Commerce
IILS	International Institute on Labour Studies
ILO	International Labour Organization
IOE	International Organisation of Employers
IPCC	Intergovernmental Panel on Climate Change
ITUC	International Trade Union Confederation
NGO	Non-governmental organisation
OECD	Organisation for Economic Cooperation and Development
SATP	Scientific and Technical Panel

TUC	Trade Union Congress
UN	United Nations
UNCED 1992	United Nations Conference on the Environment and Development
UNCSD 2012	United Nations Conference on Sustainable Development
UNEP	United Nations Environmental Program
UNHLPF	United Nations High Level Political Forum on Sustainable Development
UNISDR	United Nations International Strategy for Disaster Reduction
UNFCCC	United Nations Framework Convention on Climate Change
UNFCCC AWG LCA	UNFCCC Ad hoc Working Group on Long Term Cooperation
UNFCCC COP	UNFCCC Conference of the Parties
WCED	1987 World Commission on Environment and Development
WHO	World Health Organisation
WIPO	World Intellectual Property Organisation
WSSD	2002 World Summit on Sustainable Development
WTO	World Trade Organisation

Publications

Glynn, J. (2013). The Rio+20 outcomes, their impact on employment, the workplace and the role of employers' organisations and trade unions. *International Journal of Technology Management & Sustainable Development, 12*(3), 233-244. doi:10.1386/tmsd.12.3.233_1

Glynn, P., Torregrossa, M., & Van Ermin, R. (2013). *Holistic transport management and trade unions. Background paper preparing the first ETUC-EPE laboratory.* Brussels: European Partners for the Environment.

Glynn, P. J. Ecological Modernisation: Operationalising the Theory. Submitted for review and publication December 2013. *The International Journal of Climate Change: Impacts and Responses,*

Glynn, P. J. (2013). Employment and skills development in a sustainable pacific economy. *Sustainable Development in Oceania: Towards a New Ethic.* New Caledonia.

Glynn, P. J., & Taplin, R. (2012). The essential role of employment and the workplace in climate change policy and effective disaster risk management planning. In L. Filho (Ed.), *Climate change and disaster risk management* (pp. 399-410). Heidelberg: Springer. doi:10.1007/978-3-642-31110-9

Glynn, P. J., & Taplin, R. (2011). The climate change related labour market implications for the construction industry. *17th Pacific Rim Real Estate Society Conference,* Gold Coast, Australia.

Glynn, P. J., & Taplin, R. (2012). Climate change: The related labour market implications for the construction industry. *The International Journal of the Constructed Environment, 2*(1), 89-100.

Glynn, P. J., & Taplin, R. (2013). The role of employers' organisations and trade unions in the development of climate change policy. *The International Journal of Climate Change: Impacts and Responses, 4*(4), 57-89.

1 Introduction

1.1 Introduction

The International Labour Organization (ILO) defines climate change as an increase in global temperature due to higher concentrations of greenhouse gases in the atmosphere, resulting in warmer temperatures and severe weather events (ILO 2012). This definition is based on those of the United Framework Convention on Climate Change (UNFCCC 2011) and the Intergovernmental Panel on Climate Change (IPCC 2007). Governments worldwide have made a commitment to reducing their greenhouse gas (GHG) emissions through climate change mitigation policy, a dimension of public policy (Merriam-Webster 2013)[1] that relates to addressing climate change and fostering the transition to a low carbon economy. Climate change policy demonstrates the intentions of the state in regard to climate change mitigation and outlines its plans to meet its GHG emission targets.

The impacts of climate change policy will be felt in all workplaces and across all sectors of industry. Proposals by the state concerning the transition to a low carbon economy require change to patterns of production and consumption: changes that will impact the world of work, described by the ILO (Worldwatch Institute 2008) as jobs being lost, jobs being created and jobs changing. This research has been stimulated by the debate among stakeholders about the impacts

[1] The governing policy within a community as embodied in its legislative and judicial enactments that serves as a basis for determining what acts are to be regarded as contrary to the public good.

of climate change policy on industry and its links to the labour market. Those impacts must be reflected in plans for the labour market if business is to continue to grow and if the transition to a low carbon economy is to be fair for workers. As their representatives, employers' organisations and trade unions should ensure that climate policy development and implementation is considerate of the labour market impacts and that it delivers a just transition and a trained and efficient workforce.

The Organisation for Economic Cooperation and Development (OECD) observes that while its modelling shows climate change will be the cause of considerable change in the distribution of the labour force, there is disagreement about what the employment impacts will be and about how best to respond to them (Miranda and Larcombe 2012). This thesis focuses on the role of employers' organisations and trade unions in the development of climate change policy with respect to the European Union.

1.2 Background

In the decade following the 1972 UN Conference on the Human Environment, concerns about global warming and the future of the environment escalated. In 1983 the UN General Assembly established the World Commission on Environment and Development (WCED) to propose long-term environmental strategies for achieving sustainable development. The Commission's report *Our Common Future* (WCED 1987) strongly influenced the heads of state and government in the lead-up to the 1992 UN Conference on Environment and Development (UNCED). The conference, which became known as the Earth

Summit, produced the Agenda 21 Plans for Action (UNCED 1992), a wide-ranging blueprint for action to achieve sustainable development worldwide. It also produced the Forest Principles, the Convention on Biological Diversity and the Framework Convention on Climate Change (UNCSD 2012). Within five (5) years of the Earth Summit, the 1997 Conference of the Parties (COPs) to the UN Framework Convention on Climate Change (UNFCCC) had agreed to the Kyoto Protocol. The Kyoto Protocol states the agreement between developed and developing countries to work together to meet the climate change challenge and developed countries would commit to emission reduction targets (UNFCCC 1997).

The circumstances that give rise to climate change as a policy imperative are unique in that through almost global consensus, policy is guided by the UNFCCC, the Kyoto Protocol and subsequent agreements. The Protocol sets targets on the ratifiers, who represent 37 industrialised countries and the European community, for reducing greenhouse gas emissions (UNFCCC 1997). Even so, there is little consistency in the mitigation policy and program development of the nation-states globally. A further dimension that differentiates climate change policy from the mainstream of public policy development is that it is divided in two phases: the first phase of transitioning to a low carbon economy and a subsequent maintenance phase, which may require a different mix of programs and policy. This research examines the effects of climate change policy on the labour market through the particular policy environment of the nation-states examined in the case study.

The European Union (EU) was an active participant in the Earth Summit and a signatory to the subsequently ratified 1997 Kyoto Protocol. The 1997 Treaty of

Amsterdam added the protection of the environment to the EU objectives of economic growth and social wellbeing (Europa 2012a). Prior to the ratification of the Treaty of Amsterdam, many countries within the EU had already moved to reduce their greenhouse gas (GHG) emissions and to the development of alternatives to fossil fuels because of concerns about energy security (Syndex 2011). In doing this, the EU and member states provide a working model of ecological governance that respects the autonomy of the state in determining domestic policy while operating within a regional framework. The EU provides a model of sustainability management and public policy development and as such is a rich source of valid data for research. It is for this reason that the EU and the United Kingdom as a member state with a mature developed economy and that has construction and transport industries were selected as a case study for this PhD research.

This study examines the theoretical framework of ecological modernisation (EM), a theory that is increasingly used to guide public policy development. Ecological modernisation is the study of the relationship between the nation-state, the economy and innovation, and civil society in the achievement of environmental outcomes (Mol and Sonnenfeld 2000). This research addresses a gap in the existing theory by exploring the significance of labour market issues in climate change policy and examining the role of employers' organisations and trade unions.

This research discusses the labour market impacts of climate change policy. The policies of government to manage GHG emissions will require business to change its product and service delivery arrangements, which in turn means labour

requirements will also change. With the accelerated timeframes and the radical changes required to contain the rate of increase in global warming, intervention in the labour market is necessary if labour is to be available in the numbers and with the skills required and if workers are to be afforded a just transition with rights and benefits as they transition to the new low carbon workplace.

1.3 Statement of the research problem

This thesis contends that the theoretical framework guiding public policy development, ecological modernisation, should embrace labour market considerations and should identify employers' organisations and trade unions as stakeholder representatives integral to the attainment of the ecological outcome. This contention leads to the following research question:

> *Does the theory of ecological modernisation adequately reflect the role of employers' organisations and trade unions in the development of climate change policy?*

To answer the research question, four propositions have been tested:

Proposition 1: The labour market is significantly impacted by climate change policy

Proposition 2: The ecological outcome is impacted by the effectiveness of labour market planning

Proposition 3: Employers' organisations and trade unions are important actors in the development and implementation of the labour market plan

Proposition 4: Employers' organisations and trade unions are important actors in ecological modernisation

In order to test these propositions, this research project has extended EM from a theoretical concept to a practical methodology, thereby constructing a framework of policy options through which the results could be assessed.

1.4 Motivation and significance of the research

This research has been motivated by the belief that there is a need to inform labour market practitioners of the impact that climate change policy will have on their sphere of interest. The objective of climate change policy is to reduce GHG emissions that require change to patterns of production and consumption that has direct implications for the labour market. Public policy must take into account the consequential labour market impacts or it may result in labour and skill shortages; these are issues that create barriers to the efficient conduct of business and the effectiveness of climate change mitigation and adaptation programs. They are issues that can be avoided with proper planning.

The transition to a low carbon society will change patterns of production and consumption. These changes are described by the ILO as impacting on the world of work (Worldwatch Institute 2008) in that they will result in jobs being lost, jobs being created and jobs changing, thus affecting all sectors of industry. While current international climate change commitments provide for the protection of workers' rights through the requirements for decent work and a just transition (UNFCCC 2010, UNCSD 2012), they fall short of addressing the requirement for labour market reform. For labour market practitioners, this is deemed poor planning at best as disruption in the labour market is a certainty and, without addressing this requirement for reform, the chances of achieving ecological

targets are diminished. For the theorists and policy analysts, this represents a challenge to the utility of the theoretical framework of EM, one that could require a clarification to inform its further application.

Additional pressures on the state arising from the aftershocks of the global financial crisis, the discovery of new stocks of fossil fuels easing concerns about energy security and the growing ambition gap in international climate agreements are constant tests of the validity of the theoretical models that influence decision-making and public policy. The institutions involved with and responsible for policy development are being required to act quickly, with greater constraints and increased scrutiny. This research will test whether the consequential implications for the implementation of climate change policy, and on the labour market, are related and whether EM theory holds.

This research contributes to the body of knowledge that informs the theory of EM. As articulated by Spaargaren *et al.* (2009), EM theorists agree that further research is required and that "little is known still on how, to what extent and how successfully environmental interests are included in all kind of economic, cultural and political practices…" (p. 511). Research, such as this project, that explores the relationship between these practices, climate change policy and the labour market should provide insights into the requirements of all stakeholders and inform the public policy process.

1.5 Statement of significance

In the debate about climate change and the public policy intervention, the need and benefit of labour market planning is often overlooked. This research explores

the need for labour market planning to be included in climate change policy. Strategies to manage greenhouse gas emissions are uniquely local and reflect many influences, such as the domestic economic, social, cultural and political situation of a country. However, all of these strategies have an impact on the labour market in addition to the normal and customary turnover of labour. Adjustments to labour planning by the state and industry need consideration if the demands for labour by industry are to be met and so that workers will be treated fairly during the transition to and in a new low carbon economy.

The study also offers an opportunity to explore the role of civil society in EM. While EM theorists' references to civil society are often directly or by implication a reference to environmental activists, the study will consider if and how ecological modernisation theory embraces the activities of the employer organisations, trade unions and environmental and other interest groups formally recognised by the United Nations Framework Convention on Climate Change (UNFCCC) as civil society.

The study will also consider the impact on employment and the workplace as an objective for ecological modernisation.

1.6 Contribution to the knowledge

The research has aimed to contribute to the knowledge in the field by addressing a gap in the theory. The research also extends the limits of EM by moving beyond the theoretical proposition to its operationalisation.

The research explores the significance of labour market issues in climate change policy and the role of employers' organisations, trade unions and other civil society interests in these issues. It also addresses the issues relevant to the extension of the theoretical framework to an operationalised model.

1.7 Aims

The aims of this research are twofold: to establish the role of employers' organisations and trade unions in the formulation of climate change policy; and to establish the utility of ecological modernisation theory.

The research is a qualitative study using a mixed-method approach involving a review of the international climate policy process with the involvement of the employers organisations and trade unions and a single case study with four (4) embedded multiple units of analysis. The embedded units of analysis are the employers' organisations and trade unions in the United Kingdom and European Union. The case study is supported by studies of two industry sectors (construction and transport), and two situation-specific studies that were undertaken as part of this research project and have been published in peer-reviewed journals.

Examining a single case study has been adopted as an appropriate approach to explore the phenomenon of climate change policy and its impacts on employment and the workplace. Yin (2009), in speaking of the limitations of case study research, advises that science has developed one set of rationales for doing single case studies and another for doing comparative or multiple case studies. He

contends that a study that applies both of these sets of rationales should overcome the limitations attributed by some to case study research.

Barzelay (1993) contends that a single case study has the capability of supporting empirical generalisation. A single case study can reflect reality, which does not necessarily change merely for the fact of multiple realities (Flyvbjerg 2006; Sayer 2008). John Gerring explains that a case study can be a "focused study that reflects upon a larger population and a study that purports to explain only a single case" (Gerring 2006, p. 707). He says the aim of a single-case study is "to investigate a bounded unit in an attempt to elucidate a single outcome occurring within that unit" (p. 707). Gerring's (2006) approach recognises there can be sub and supra-case observations within the one study. He uses the examples of individuals and continents to demonstrate sub and supra observations respectively within a case about nation-states. In this research project, the sub-cases presented are the employers' organisations and trade unions in the UK and the supra-cases their European regional representatives. Each has a different role and it is the sum of the actions of each organisation that creates the single outcome of national climate change policy.

1.8 Assumptions and limitations

Although every reasonable effort was made to ensure the work of this thesis was as comprehensive as it could be, as identified by Yin (2009), every research project contains assumptions and limitations. The limitation of this study is that it relies on a single case study and the embedded units of the employers' organisations and trade unions in the UK and the European Union. As cautioned by

Yin (2009), Mahoney and Larkin Terrie (2009) and Goertz and Mahoney (2009), researchers who study one or few cases are more vulnerable to the charge that their findings are not generalisable and they are much more likely to be accused of bias.

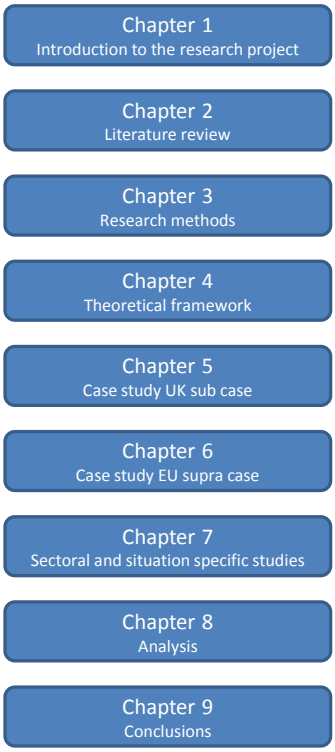
The case study also relies on the experience of a regional economic and political union of states, the European Union and one of its member countries with a mature economy, the United Kingdom (UK). While providing rich sources of data, the extension to applicability in other economies cannot be assumed. The European Union is a relatively unique model for managing the affairs of a region and the member states. The model blends the regulatory jurisdictions of the EU and the UK and other members while maintaining the integrity of each.

Despite these assumptions and limitations, the rich data provided by this model means that it is a case that merits documenting and analysing.

1.9 Structure of the thesis

The thesis is structured as shown in Figure 1-1.

Figure 1-1: Thesis structure



This chapter provides the introduction, defines the problem being researched and provides an outline of the literature review and the methodology. It also includes a summary of the significance of its contribution to the theory. Chapter 2 discusses the research methods and the limitations of the research. A review of EM theory, the climate change policy process and civil society actors is presented in Chapter 3. Chapter 4 presents an in-depth exploration of the theoretical framework and develops a model to operationalise the theory. Chapters 5 and 6 contain the reports of the embedded units within the UK and EU contexts respectively. Chapter 7

contains four reviews: two of industry sectors and two situation-specific issues. Chapter 8, which analyses the findings of the research, tests the propositions and presents a response to the research question, while Chapter 9 provides a conclusion for the research.

2 Research methods

2.1 Introduction

This chapter discusses the methodology applied to the research undertaken in this thesis. The research offered an opportunity to explore if, and how, ecological modernisation theory embraces the activities of the employer organisations, trade unions, environmental groups and interest groups formally recognised by the UNFCCC in the development of international climate change policy. The theoretical investigation also considered the impact of climate change policy on employment and the workplace as an objective for ecological modernisation.

2.2 Methodological approach

The research is a qualitative study using a mixed methods approach that involves a review of the role of employers' organisations and trade unions as civil society organisations (CSOs) in the climate policy process and a single case study with four embedded units of analysis. The mixed methods approach was designed to provide data to support development of the process to operationalise the theoretical framework and inform climate change policy. The case to be studied is the climate change policy impacts on employment and the workplace.

The decision to use a mixed methods approach was influenced by the sources of suitable data. There is extensive publicly available literature that provides a comprehensive discussion of the issues that are the subject of this study's research

and public policy analysis. Patton (2002) contends that the sources of data for public policy analysis are authority, statistical or observational analysis, and deduction or sensitivity analysis. Within this framework of options, publicly available literature is regarded as authoritative where authority is established by one or more persons, books, articles, or other reliable sources of information regarding the relevant goals, policies or relations.

This research used the policy process review and case study method because those approaches are well suited to exploring and understanding the social aspects of climate change policy and the deployment of labour market behaviour. Nagel (1999) submits that case studies and careful document review provide data in qualitative research that can be used to judge the quality of the findings. Using these methods allowed the researcher to investigate the pattern of climate change policy development and implementation from public documents, which offered detailed information about various aspects of adaptation and mitigation initiatives, both current and past. Using a case study also allowed the researcher to observe organisational behaviour in the real-life context in which contemporary events occur.

As stated earlier, this study followed a qualitative approach to analyse data and is consistent with the overall study approach. When analysing data, precautions must be taken in the way data is segmented into units and rearranged into categories (themes) for the purpose of facilitating pattern-matching, comparison and in-depth insight between segment data (Eisenhardt 1989; Strauss and Corbin 1998). Hence, the Nvivo analysis tool was used. The Nvivo package tool served as a rapid and effective way to organise, cluster and retrieve coded segments to a

particular query or theme. More than 400 documents generated the source data for the research. Nvivo was essential in the sorting of the otherwise unstructured data into relevant and related nodes, allowing the tracking of ideas and themes of investigation. The themes of this research, which are the impact of climate change policy on the labour market, the role of employers' organisations and trade unions, and the utility of ecological modernisation in climate change policy, were already known to the researcher due to their theoretical relation to the research question and design. They were then developed and explored, thus creating nodes into Nvivo. This involved reviewing the documents collected and gaining a deep understanding of the case undertaken. Organising the data into nodes and then into a hierarchical structure (called "tree nodes") allowed the researcher to have easy access to relevant information. As the research progressed, the nodes were refined to capture the meaning intended.

The case studied in this research is a single case study with embedded units of analysis. Case analysis is a process that involves organising data for in-depth study and comparison. What constitutes a case or unit of analysis is usually determined during the design phase and becomes the basis for purposeful study in qualitative enquiry where the purpose is to gather comprehensive in depth information about each item of interest (Patton 2002). While the number of organisations in the study for this research project is small, there are separations of responsibility within the organisations that cross international, regional and domestic statutory jurisdictions, providing a range and depth of information for purposeful study.

The case study design required the decision whether to conduct a single or multiple case study. Whereas a multiple case study design would have provided

multiple observations which would be relevant if replication was the consideration, the priorities for the study were the supra and sub case observations within the case that gave rise to the phenomenon being observed. For this reason it was considered a single case study was the appropriate approach to the study of the phenomenon of climate change policy impacts on employment and the workplace. Barzelay (1993) contends that a single case study has the capability of supporting empirical generalisation, as does Flyvbjerg (2006). Sayer (2008) rejects concerns about generalising from a single case, arguing that it reflects reality, which does not necessarily change merely for the fact of multiple realities. Yin (2009), in speaking of the limitations of case study research, advises that the choice of multiple or single-case designs would depend on the subject of the study and that science has developed one set of rationales for doing single-case studies and another for doing comparative or multiple-case studies.

Yin (2009) contends there are four tests that can be used to establish the quality of the research that are common to all social science methods: construct validity; internal validity; external validity; and reliability. By establishing there is quality in the research, concerns about rigour, comparability and replicability can be avoided. Gerring (2006) contends that a case study can be a "focused study that reflects upon a larger population and a study that purports to explain only a single case" (p. 707). Consider his example:

> What does it mean, then, to investigate a 'single outcome for a single case'? A case must be 'bounded' in some fashion, and it must reflect the primary inference that a writer is attempting to demonstrate or prove. If the

> argument is about nation states, then the latter are regarded as cases, even though sub-case observations (e.g. individuals) or supra-case observations (e.g. continents) may be enlisted as part of the argument. In short, cases always rest at the same level of analysis as the primary inference. It follows that whenever this inference changes, the definition of 'case' may change (p. 710).

The attraction of Gerring's (2006) approach is that it integrates sub and supra-case observations within the one study. He uses the examples of individuals and continents respectively to demonstrate the sub and supra observations within the case about nation-states. He also said the aim of a single-case study was "to investigate a bounded unit in an attempt to elucidate a single outcome occurring within that unit" (Gerring 2006, p. 707).

2.3 Selecting the case study

Goode and Hatt (1952) define a case study as a way of organising social data so as to preserve the unitary character of the social object being studied. In other words, it is an approach that views any social unit as a whole. According to this definition, a social unit - a real individual, social event or group of people who are relevant to the scientific problem being investigated - are treated as a whole whose characteristics are kept together. A case study, which is also sometimes referred to as a monograph, means studying only one event, process, person, organisation unit or object. Yin (1988) defines a case study as an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident.

Gerring (2006) proposes two methods for selecting case studies: random selection or information-oriented selection. He further divides information-oriented selection into cases that are extreme, maximum variation or paradigmatic. The case selected for this study conforms to the criteria of an information-oriented paradigmatic case (Gerring 2006).

The unit(s) of analysis is an important component that must be considered in any research design. Without a clear design of the unit(s) of analysis, the researcher would not be able to limit the boundaries of the study (Pare 2004). Based on the literature review, research question(s) and research design, this research sought to develop a conceptual framework of climate change policy and the operationalisation of the ecological modernisation theory perspectives. Specifying the unit of analysis is important in order to understand how this case study relates to the broader body of knowledge.

One of the aims of this research was to explore whether the theory of ecological modernisation adequately reflects the role of employer's organisations and trade unions in the development of climate change policy. It was therefore considered important that the case study selected not only allowed for the exploration of this key investigation but also for the adaptation of ecological modernisation theory from a theoretical framework to a methodological approach. The case selection was considerate of the relevance of the study for both current and further analysis and hence application (Gerring 2006; Yin 2009).

For this research project, the bounded units within the case are employers' organisations and trade unions and the single outcome is their role in influencing climate change policy (the case) with regard to its impacts on employment and the

workplace. The case study selected had to meet four specific criteria. It needed to include countries where climate change policy was not originally in place but had been for at least a decade; where employers' organisations and trade unions were active nationally and regionally; where national level climate change legislation had been implemented; and where the country was affiliated with the international climate agreements. These considerations immediately disqualified Australia and the United States as they both refused to ratify the Kyoto Protocol, although Australia eventually ratified in 2007. Since environmental issues were first identified as a global concern with the 1992 Rio Summit, the European Union and its member states have developed climate change policy with targets that meet, and in many cases exceed, the international benchmark of the Kyoto Protocol.

The bounded/embedded units selected for the case study are geographically European and are representative of the regional perspective. To that end, the European Union structure is used as the network that links the activities and the activists, and also the authority over implementation, governance and reporting. From the national perspective, there are two streams of enquiry: the national organisation's role in domestic policy development, and regional policy development with the responsibility for taking these policy outcomes back to the domestic jurisdiction.

The selected units are the sub-cases of UK employers' organisations and trade unions, and the supra-cases are their European regional affiliates. Each has a different role within the organisational structure and it is the sum of their actions that arguably creates the single outcome of national climate change policy.

This thesis is also informed by demonstration studies of industry sectors and events. These studies address the labour markets implications for the construction and transport sectors in Europe, effective disaster risk management and the international climate and sustainability agreements.

2.4 Locating, collecting and understanding the data

The research project aimed to inform the contention that employers' organisations and trade unions are important in the process of developing climate change policy and that they are integral to the effective operationalisation of the theoretical framework of ecological modernisation. Evidence was sourced from academic research, proceedings that inform the policy development process and a major case study. The research project was undertaken at a time when the influences over environmental policy were evolving rapidly because of changes in the underlying climate science (IPCC 2007) and also the political, social and economic developments which generated a wealth of data with which to work.

The available documentation is extensive and had not previously been collated for analysis. Data gathered for the case study analysis addressed 1) the research objectives in respect of the activities of the embedded units of the employers' organisation, trade union primarily through document search, and 2) the three aspects of ecological modernisation: the economy, the state and civil society organisations; the role of employer organisations and trade unions; and the impact of employment and the workplace. The case study analysis focused on their involvement in the development of climate change policy and their sub-activities at each level that influence outcomes.

Data collection for the embedded units within the case study involved a search of the extensive information available via newspaper databases, journals and academic literature as well as in government publications and policy documents. Web searches and the library search facilities were utilised to locate the information used for this research. There were three discrete categories of search key words/phrases used:

- business and industry associations; trade associations; climate change policy; low carbon economy
- employment; green jobs; labour market; climate change policy; low carbon economy
- trade unions; climate change policy; low carbon economy

The search focused on information that informed the public policy process and as such was publicly available. Internal records, interviews, survey data was not relevant information for this process and were not sought.

2.5 The research design

The mixed methods of policy process review and case study sought to provide data to operationalise the EM theoretical framework and inform climate change policy. The software tool Nvivo, that supports analysis of qualitative and mixed methods research, was used to construct the model for operationalising the theory based on the theory and the outcomes and from which the necessary interventions along the pathway could be identified, and the case study evidence evaluated.

Yin (2009) states that the analysis of case study evidence is one of the least developed and most difficult aspects of doing case studies. Of the four strategies

he articulates, that of relying on theoretical propositions was considered to be the most relevant to the context of this study and was selected on this basis. The data was analysed in the context of the ecological modernisation theoretical propositions. The analysis looked particularly at those matters in relation to the research objectives, that is: the labour market is significantly impacted by climate change policy; the ecological outcome is impacted by the effectiveness of labour market planning; employers' organisations and trade unions are important actors in the development and implementation of the labour market plan; and employers' organisations and trade unions are important actors in ecological modernisation.

Christoff (1996) and Howes *et al.* (2010) provide a basis for analysis when they measure effectiveness in relation to the ecological modernisation model along a continuum, as relative measures of weak and strong. In climate change policy, as in ecological modernisation, the appropriate or optimum policy is influenced by many things including the national, cultural, economic, social and political context. Under these circumstances, there is no absolute measure of "good" and "bad" policy, merely what is achievable and appropriate to the circumstances. Esty and Porter (2005) and Esty (2012) have undertaken quantitative analysis of policy results, with Esty (2012) having reported through the Environmental Performance Index. While providing a valuable measure of policy content, it is however a retrospective measure. The Green Economy Report (UNEP 2011) similarly developed a measurement tool.

If analysis of the climate policy process is also to provide information to guide practitioners in their work to influence policy, then it must take into account that

an optimum climate policy mix will be dependent on criteria that are relevant to a particular nation-state where each is unique and where the only standardised external measure is the commitment of a nation-state under the Kyoto Protocol to a quantifiable greenhouse gas emission target.

While the nation-state is the statutory jurisdiction for climate change policy, the form and scope of policy is strongly influenced by global and regional activities (UNFCCC 1997; Europa 2010). The circumstances that give rise to climate change as a policy imperative are unique in that it is generated through almost global consensus in the form of the UNFCCC, the Kyoto Protocol and subsequent agreements. Even so, there is little consistency in the approach to policy and program development at the national level. A further dimension that differentiates climate change policy from the mainstream of public policy development is that it could have two phases - the phase of transitioning to a low carbon economy and the maintenance phase – each phase which may require a different mix of programs and policy.

2.6 Ethical considerations

While it was considered that ethical approval was not required as the communication with the representatives of organisations involved in the case study would be confined to enquiries about publicly available documents, an application for ethical clearance was submitted to the Bond University's Human Research Ethics Committee. The application stated that the data inquiries would address organisational perspectives and as information about personnel or their personal perceptions was not relevant to the data analysis, its collection was not

proposed and therefore the research was of negligible ethical risk. Section 5.1.22 of the National Statement of Ethical Conduct in Human Research provides that research can be exempted from review if it is negligible risk and involves the use of existing collections of data or records that contain only non-identifiable data about human beings (NHMRC 2007).

The application was approved (Ethics Reference Number: RO 1478, in Appendix 4) on the grounds that it was believed that the research posed a negligible risk in the terms of the NHRMC Section 5.1.22 requirement that exempted it from review by Bond University's Human Research Ethics Committee.

2.7 Limitations of the research methodology

Despite the efforts of the researcher to produce quality work, the researcher still believes there is room for improvements in methodology. It is important to acknowledge the limitations of this research and to understand how they can best be addressed during the research process so that shortcomings can be minimised.

One limitation of this research is that it relies on a single case study and the embedded units of the employers' organisations and trade unions in the UK and the European Union. As cautioned by Yin (2009), Mahoney and Larkin Terrie (2009) and Goertz and Mahoney (2009), researchers who study one or few cases are more vulnerable to the charge that their findings are not generalisable and they are much more likely to be taken to task for bias.

The most traditional criticism of a single case study is its inability to be generalised to new settings, as each case has too many unique aspects (Blaikie 2000). However, the same criticism can be made of a single experiment or the

study of a single population; however, scientists use those to generalise from one experiment to another (Yin 2003). This research project is a unique case and is conducted as an opportunity to observe and analyse a phenomenon that was previously less accessible to scientific investigation. It is arguably worth documenting and analysing and therefore should represent a significant contribution to knowledge for both practitioners and decision-makers. Also, findings from qualitative research can sometimes be built on and used to base quantitative research studies later. The case study examined in this research also relies on the experience of regional organisations and a developed country with a mature economy. While providing rich sources of data, the extension to applicability in other economies cannot be assumed. The European Union is a relatively unique model for managing the affairs of a region and the member states. The model blends the regulatory jurisdictions of the EU and the UK while maintaining the integrity of each. Despite these assumptions and limitations, the data provided by this model means that it is a case that merits documenting and analysing.

Despite all these limitations, the researcher believes results of this research provide a useful contribution.

2.8 Conclusion

This chapter has outlined the methodological approach used in this research. The decision to pursue data collection for the research through a review of the climate policy process and a single case study was discussed. The single case study examined in this research is supported by embedded sub and supra units of

evidence within the bounded unit. The study is also reinforced by demonstration studies of industry sectors and events.

While there are limitations to the approach to data collection selected for this research and the procedures adopted, the extensive data that has been accessed and analysed provides the assurance necessary for rigour, quality and reliability. The next chapter, Chapter 3, discusses the aspects of the international climate change policy process related to employers' organisations and trade unions.

3 Aspects of the international climate policy process related to employers' organisations and trade unions

3.1 Introduction

The field of climate change policy is evolving rapidly. At the same time as this research was being undertaken, the climate change policy development process by multilateral agencies and their influence over domestic policy was the subject of review. These events are well documented and provide information relevant to the theory and in particular the effectiveness of civil society interventions.

The contention that has guided this research is that employer organisations and trade unions, as representatives of the actors in the workplace and as the holders of a unique body of relevant knowledge, are integral to the development and implementation of effective climate change policy. This chapter establishes the impact of climate change policy on the labour market and examines the role of employers' organisations and trade unions in the process of policy development. It is structured in three sections, with each section addressing a different component of the research. These are the labour market impacts of climate change policy; the role of employers' organisations and trade unions; and the role of civil society.

3.2 The labour market impacts of climate change policy

The link between climate change and the labour market was formally recognised when the Heads of State and Government adopted the recommendations of the

UNFCCC Adaptation Working Group that climate change agreements provide for a just transition and decent work (UNFCCC AWG LCA, 2009). A just transition is defined as the recognition of workers' rights, decent work, social protection and social dialogue (Worldwatch Institute 2008). The four tenets of decent work as articulated by the International Labour Organization (ILO) are creating good jobs, guaranteeing respect of workers and recognition of their rights, extending social protection and promoting social dialogue (ILO 2011c). These tenets are called the decent work concept. The studies that these definitions come from were the first comprehensive studies that established the direct relationship between climate change and the world of work.

The emergence of labour issues in formal climate agreements reflects the growing acceptance that climate change has impacts across the broader economy and society. Whereas Nicholas Stern (2007) and Ross Garnaut (2008) established the bridge to understanding the economic impacts of climate change on a nation's economy, the research by the Worldwatch Institute (2008), GHK Consulting (2007) and the ETUC (2007) was instrumental in creating awareness of the employment and workplace impacts of climate change.

The Worldwatch Institute's (2008) report for the ILO encapsulates the findings that are common across research on the subject: due the impact of climate change on public policy and the economy, there will be a consequential impact on the labour market and some jobs would be lost, some jobs would be created and some jobs would change. On balance, there will be modest net growth in employment and all sectors of industry would be affected. It is contended by the ILO that

governments must have policy to manage the changes, and that social protection systems need to be in place to afford workers a just transition.

The 2012 research by the ILO/IILS (ILO 2012), updating the Worldwatch Report, reiterates the earlier findings, adding that outcomes for employment and incomes are largely determined by the policy instruments and the institutions that implement them, rather than being an inherent part of a shift to a greener economy. The research also suggests that policy needs to be tailored to the circumstances of the country and that there is no single policy template that can be applied in all circumstances. As an employment and incomes policy measure, the decent work concept serves as a coherent framework for improved integration of macro-economic, investment, employment and environmental policies.

In its *Green Growth Strategy Synthesis Report*, the OECD (2011) discusses the employment and distributional aspects of green economy policy, noting that occupational churn will create challenges for some and opportunities for others. The report contends that labour and skills policies are important so that workers and companies are able to adapt quickly to changes and to seize new opportunities. The ILO (2012) concurs, adding that good labour markets and social development do not occur automatically but hinge on the right policies. Additionally, they note the need to include requirements for social protection systems and social dialogue.

ILO (2012), Eurofound (2011a) and OECD (2013) research has found that the quality of jobs is enhanced when labour market institutions, the education and training system and the industry communicate regularly, as well as when social partners and, notably, trade unions are involved in the process of transformation.

Employers' organisations and trade unions play an important role in supporting the anchorage of local jobs and training and facilitating industry information valuable for the local labour market (Miranda and Larcombe 2012).

The labour market in higher GHG-emitting sectors in domestic economies is directly affected through regulatory and market measures that are aimed at reducing dependence on fossil fuels and GHG emissions. Buildings are a major contributor to the emissions problem as they are large and inefficient consumers of energy and producers of greenhouse gas emissions. The 2011 World Economic Forum report *A Profitable Resource-Efficient Future* states that buildings use 40 percent of the world's energy and emit 40 percent of the world's carbon footprint (WEF 2011). However, buildings are also part of the solution as nearly half of all energy consumed in buildings can be avoided with the use of more energy-efficient systems and equipment (WEF 2011). Three reports published in 2011 analysed the construction sector labour market (Gleeson *et al.* 2011; ILO 2011e; and OECD 2011). All three reports predict green construction will mean that some industry occupations will evolve while, in other cases, converting to a green construction team will add occupational profiles and new occupations. The ILO (2011e) forecasts the emergence of additional functions such as assurance, financing, research, education and policy-making. Gleeson *et al.* (2011) assert that green construction teams will require competent emissions assessors, project managers, assessors, appraisers, skilled labour and auditors. Austrian research finds the additional competencies required of a new green plumber tradesperson, beyond the traditional specialist technical skills, include customer orientation, the

ability to communicate, decide, consult and sell, planning competencies, a high level of independence and global thinking (Friedl-Schafferhans 2011).

In the transport sector, the shift to a sustainable mobility system is expected to create jobs and enhance social equity. It is believed new jobs will be created in the transition which, over time, will exceed the loss of brown economy[2] jobs. Transport is fundamental to the functioning of economies in Europe; the 2011 European Commission White Paper *Roadmap to a Single European Transport Area* states that in 2011, the transport sector employed around 10 million people (60 percent in road, 30 percent in rail and public transport and 10 percent in air) and accounted for 5 percent of GDP (EC 2011).

However, while there is consensus that climate change is a major threat and will have an impact on employment, there is intense disagreement about how individuals and organisations should respond and what action should be taken (Miranda and Larcombe 2012). While the debate continues about the appropriate policy options, in some sectors the options are limited. In transport, where motor vehicles are the major contributor to greenhouse gas emissions, congestion and pollution problems, the only option to reduce climate impact entails diverting public policy and investment away from roads and trucks to public transport modes. The consequence is likely to be large-scale shifts of employment within bands across firms in the sector and will require retraining, skill upgrading and career transitioning.

[2] A polluting economy (Thomas 2013)

As certain regions are highly dependent on motor vehicle factories and related employment, it is considered that the success of any strategy is enhanced by the extent to which the strategy is informed by social dialogue. The ILO (2012) contends that bringing employer organisations and trade unions into consideration augments the responsiveness of the stakeholders and triggers green transformation on a larger scale.

The UNFCCC climate agreements are drafted around the acknowledgement that no single template can apply to all circumstances (UNFCCC 2013). In the European Union, domestic policy remains the responsibility of the state and EU members' strategies are tailored to the domestic economic and social situation. The French Government has committed to the EU's 20-20-20 targets (Europa 2010a) and also resolved to extend the renewable sources target to 23 percent (Tupper 2011). The French government also adopted the programs that emerged from its government-hosted stakeholder consultations, which became known as the Grenelle 1 and 2 outcomes (Euractiv 2010). The strategy applies across 13 sectors: building, planning, transportation, energy, water, agriculture, biodiversity, health risks, waste, research, consumption, governance and overseas (Euractiv 2010). Its labour market plan is the *Green Growth Mobilisation Plan* (Ministère de l'Écologie 2010), which addresses jobs growth and is coordinated across the education, business and regional development portfolios.

The UK has been aggressive in its commitment to meeting the immediate climate challenge. The Climate Change Act 2008 provides for emissions reductions of 34 percent by 2020 and 80 percent by 2050 (DECC 2009). The UK Government's vision is reflected in its 2050 Pathways Analysis that sets the framework for

consideration of the choices that will need to be made over the next 40 years (DECC 2010).

The German Government met its commitments under the Kyoto Protocol by 2008 and has committed to a further reduction in emissions of 40 percent by 2020 and 80 percent by 2050 (Wilke 2011). Its labour market arrangements provide for greening of the occupational profiles and formal vocational training which have evolved naturally with the progressive greening of the economy (Strietska-Ilina *et al.* 2011).

These EU member states' strategies to transition the construction sector reflected the needs of their different domestic situations while remaining within the framework of the EU Climate and Energy Package (Euractiv 2010). The French Government's Grenelle Plan-Bâtiment plans the progressive scaling up of capacity to renovate 400,000 units per year by 2013 and 800,000 of the houses that currently use the most energy by 2020. By 2012, all new buildings were to be low power and to be "positive energy" by 2020 (ADEME 2011)[3]. A UK flagship initiative is the Green Deal, intended to reduce emissions from domestic and commercial dwellings by implementing energy-efficiency measures and retrofitting (DECC 2011d). While the Green Deal is a well-resourced program, there are concerns that its proposals for labour market reform are insufficient to meet the demand for labour in the number and with the skills required to carry out the work (Gleeson *et al.* 2011). In 1998, the German Government undertook the renovation of existing housing stock at the rate of 300,000 apartments per

[3] It has not been possible to establish the performance against these targets.

year (Syndex 2011). Their objectives were to create and preserve 200,000 jobs, reduce emissions by 2 million tonnes per year, drive down energy bills, reduce the state debt by a minimum of €4 billion and reduce the country's dependence on fossil fuels (Syndex 2011).

In regard to workplace policy and strategies, occupational health and safety issues remain an ever-present responsibility of management. In climate change policy, the challenge for the nation-state is to achieve effective rather than merely well-intentioned interventions in market behaviour that prove to be ineffective.

A labour market plan is a key responsibility of the state and industry, both individually and in combination, if the transition to a low carbon economy is to be smooth and effective. The scope of this plan should not merely be the single dimension of labour and skill shortages, but also the re-crafting of occupational profiles and the emergence of new occupations involved in the delivery of a low carbon installation. To this must be added the effect of new products and regulations, in particular fear of the unknown and asking people to do work for which they have not been properly trained. The green workplace is still a workplace and participants are entitled to be prepared and protected.

This section summarised the literature on the labour market impacts of climate change and surveyed instances where individual nations were able to write and implement policy that suited their region while staying in line with a broader international protocol. The following section explains the role of employers' organisations and trade unions in the policy development process.

3.3 The role of employers' organisations and trade unions

3.3.1 Defining key terms

Before their roles can be examined, it is necessary to define the terms "employers' organisations" and "trade unions" that are used throughout this research. The Macquarie Dictionary of Australian Politics defines employers' organisations simply and adequately as "collective organisations of employers" (Macquarie 2013). The Blackwell Dictionary of Political Science is almost as brief, describing them as organisations of "employers combined to defend their common interests" (Blackwell 1999a). Trade unions were equally simple to define. Blackwell (1999b) defines them as "collective organisations of employees, formed to safeguard the terms and working conditions of their members" while the Cambridge Dictionary of Sociology (2006) defines them as "formal organisations of workers that seek to represent the interests of their members through collective organisation and activity, offsetting the weakness of individual employees compared with the power of employers and managers". The ILO, OECD, European Union and the Australian industrial regulator Fair Work Australia have not published definitions, although their application of the terms is consistent with the above. For the purpose of this research, Blackwell's definitions are accepted, that is, employers' organisations are collective organisations of employers formed to defend a common interest and trade unions are defined as collective organisations of employees formed to safeguard the terms and conditions of their members.

It also is important to consider the different objectives of the organisations to which these definitions apply. Plowman (1978) describes trade unions as activists on workplace issues and employers' organisations as associations of like interests.

He asserts that employers' organisations are reactive by nature which has allowed unions to effectively dictate the industrial agenda, that it is only the actions of unions that bring employers together and at times when there is no union activity, employer groups lose interest and dissipate. He does not mean that the organisations are scaled back to the point of non-existence, but that the interests of the organisation and its members shift to other issues of relevance to their business and industry needs which they believe benefit from a collective presence. The financial viability of business organisations and their effectiveness as an activist with government is influenced by their industrial relations responsibility and the incidence of union activity (Croucher *et al.* 2006, Traxler 2010). Traxler goes on to say that State based support for multi-employer bargaining has the effect of delivering to business associations a grip on the labour market that prompts governments to involve them in public policy which then pulls in trade unions, given the practice of involving organised interests in public policy according to the principle of class parity.

Blackwell's (1999b) description of trade unions as collective organisations of employees formed to safeguard the terms and conditions of workers is commonly accepted (for example Hyman 2001, Kelly and Heery 1994). Hyman (2001) also observes that the representative role of trade unions brings further responsibilities, as agencies of class in the labour management conflict, and as functionaries within the social framework which they aspire to change. He observes that in times of change and challenge for union movements, a reorientation may occur between their responsibilities to the market, society and class. The conflict that arises in the process of reorientation due to ideological

differences amongst the membership and the factions creates further problems for the trade union in periods of declining membership. Kelly and Heery (1994) contend that survival requires that ideological difference are put aside in order to conserve, mobilise and target union resources on the immediate priority issues.

The objectives of employers' organisations and trade unions overlap only with regards to workers' wages and conditions, and union workplace activism. The dichotomy is demonstrated at the international climate negotiations in which trade unions for example have successfully advocated the inclusion of decent work and a just transition in the formal texts (UNFCCC 2010; UNCSD 2012) and have done so unopposed by employers' organisations which has focussed its advocacy on trade and energy (ICC 2012).

3.3.2 International context

The peak international organisations for business and employers are the International Chamber of Commerce (ICC) and the International Organisation of Employers (IOE) respectively. The ICC has consistently advocated that international climate agreements must be considerate of the consequential impact on business and that business is an essential link in the value chain that will deliver the environmental outcome (ICC 2010). Its advocacy focus at the UNFCCC COPs was trade and energy, while at the Rio + 20 Conference it was the capacity of trade and investment to help create sustainable jobs and to make a greener and fairer economy happen (ICC 2012). Neither the ICC nor the IOE have responded to the labour and employment proposals for decent work and a just transition that emerged firstly in the 2010 UNFCCC Cancun Agreement (UNFCCC 2010) and then the Rio + 20 Conference outcomes and in trade union advocacy to the Conferences.

The peak organisation for workers is the International Trade Union Confederation (ITUC). The ITUC or its predecessor organisations the International Confederation of Free Trade Unions (ICFTU) and the World Confederation of Labour (WCL) have attended the international climate and sustainability conferences since the 1992 Rio Summit. Their policy position has evolved, albeit around the same themes of worker equity and a just transition. At the 2010 UNFCCC COP 16 the ITUC catchcry was "What do we want in Cancun? A Just Transition NOW" (ITUC 2011). The ITUC has been the primary and possibly only non-governmental advocate for the inclusion of labour and employment issues in Conference agreements and many of the proposals from its manifestos to the Conferences have been taken up. At the time of writing this thesis, the ITUC proposal for a global financial transaction tax as a means of financing the sustainability agenda remains an option being considered in the ongoing discussions (ITUC 2012).

The formal roles of the ICC and the ITUC in UN sustainability and climate change activities are as the central contact and administrators of the Business and Industry, and Trade Union and Workers Major Groups[4]. Although these two major groups have many issues of common interest in their pursuit of a favourable commercial and industrial environment for their members, they rarely interact at COPs. The Trade Union and Workers Group has taken up advocacy of the decent

[4] Since the first UN Conference on Environment and Development in 1992 - the Earth Summit - it was recognised that sustainable development could not be achieved by governments alone. This notion is reflected emphatically in the landmark outcome document of that Summit, "Agenda 21". Section 3 underscores the criticality of harnessing expertise and capacity from all sectors of society and all types of people: consumers, workers, business owners, farmers, students, teachers, researchers, activists, indigenous peoples and other communities of interest. Agenda 21 formalised this concept by recognising nine sectors of society as the main channels through which citizens could organise and participate in international efforts to achieve sustainable development through the United Nations. These nine sectors are officially known as "major groups" (UN SDKP 2013).

work agenda while the Business and Industry Group does not operate as an advocate but as an agency through which the sectoral or domestic interests of its members can individually participate in proceedings, acting as a forum for exchange, gathering and disseminating information. Prima facie, the trade unions have been more effective in influencing the outcomes of proceedings. The Business and Industry Group are not motivated in that way and they do not have a mandate or a formal constituency. In practical terms, it is of no matter to the ICC how the sectoral interests use the opportunity, and neither is it their interest to measure the outcome, but rather whether they are able to optimise the opportunity for the delegates. That said, the business representation has been high level, and so it is reasonable to assume that the advocates at the negotiations are credible and supported by market intelligence.

3.3.3 European context

The 1993 Maastricht Treaty, the treaty that forms the EU, provides for a highly competitive social market economy aiming at full employment, social progress and improvement of the environment (Europa 2012). It requires that employers' organisations and worker representatives are consulted on matters of social policy, social and economic cohesion, environment, health and consumer protection. In European regulation, employers' organisations and trade unions are afforded the title of social partners and are viewed as playing an important role in the economy as a whole and the labour market in particular.

The literature shows that in many EU member states, the social partners are involved with low carbon economy issues from the stage of policy formulation (European Commission 2011a). The European Commission looks to the social

partners to create consensus for policies across industry and society. It has confidence in their ability and leadership, expressing the view that "a shared analysis of employment opportunities and challenges by social partners can contribute greatly to a well-managed and socially just transition" (European Commission 2011a, p. 153). The literature observes that employers' organisations and trade unions have been positive contributors to the development of public policy and the implementation of adaptation and mitigation strategies, interacting with the nation-state, the actors in the economy and others in civil society to facilitate the transition. Reports by some agencies of the European Commission contend that the most successful adjustments to the labour market in the transition to a low carbon economy have taken place when social partners were involved in the process of transformation (Eurofound 2011a, Syndex 2011).

The ITUC advocates that climate change should be a matter for collective bargaining where issues of interest to organisations' representative of employers and workers are subject to negotiation and inclusion in collective bargaining agreements (Morris 2010). Collective bargaining is usually associated with the industrial relations process of negotiating wages and conditions of employment but, in the European statutory jurisdiction, the collective bargaining process is also being used as a regulatory tool with the collective agreement as the regulatory instrument (de Boer *et al.* 2005; Smismans 2008). The IOE's view is that climate change may be a matter for social dialogue but not collective bargaining, arguing that as an issue for labour and management, climate change does not add a condition to existing labour agreements and that issues arising from climate change where relevant to the business should be addressed through

the normal consultation process (IOE 2009). Social dialogue is defined as all types of formal dialogue involving discussions, consultations, negotiations and joint actions undertaken by employer and worker representatives (Eurofound 2011c). In Europe, social dialogue at company level on issues such as energy efficiency and climate change is slowly spreading but it is not common practice (European Commission 2011b).

3.3.4 UK context

Employers' organisations and trade unions have a degree of recognition across the community as the representative organisations for their members and, as such, are often invited to contribute to the process of public policy development and its implementation. Their advocacy on climate change reflects their different philosophical perspectives - employers' organisations are concerned with ensuring companies remain competitive in the transition to a green economy (Eurofound 2011a), while trade unions insist on a just transition that includes social dialogue, skill adaptation and investment in green jobs (European Commission 2011a).

The largest employer organisation in the UK, the Confederation of British Industry (CBI), declared its commitment to action on climate change early and openly, although it did not adopt a formal policy position. In 2007 the CBI published the report *Climate Change: Everyone's Business* which, in the absence of a formally stated policy, became the CBI's manifesto on climate change (CBI 2007). It formed a specialist advisory committee of the major UK businesses and resourced a secretariat that was active in public discussion and provided guidance to members through information and awareness.

There were two key messages of the 2007 CBI report (CBI 2007). The first was a declaration of support for the government's emission reduction and energy-efficiency strategies. The second was stating that the UK had a unique opportunity to prosper by taking a lead in the development of low carbon technologies and services. However, despite its early flush of leadership, the enthusiasm by the CBI was not sustained and it subsequently fell back to a service delivery program restricted to providing information to members and reacting to government and public sector initiatives. It is not now regarded as being influential over public policy on climate change.

While it is the largest membership organisation representing business in the UK, the CBI is not a formal peak organisation. Its association members advocate on their own behalf except on issue-specific occasions when they agree that CBI should be the advocate. On climate change, the CBI is not briefed to act on their behalf. Bailey and Rupp (2006) provide a pithy assessment of business representation on the UK, observing that the organisations experienced poor credibility with government because there were so many of them and they lacked a strong peak organisation. As a consequence, the UK Government often chose to deal directly with the leading companies.

The peak organisation of trade unions in the UK is the Trade Union Congress (TUC). The TUC has focused its domestic efforts on the Green Workplaces initiative, a program it developed to bring together both workers and management to secure energy savings and reduce the environmental impact of their workplace. The TUC provides training for union sustainability representatives on the technical issues related to climate change adaptation and

mitigation, and negotiating with employers. In 2010 the TUC initiated its campaign for union representatives to be afforded the right to time off during working hours to promote sustainable workplace practices, to receive training and to inspect workplaces for energy efficiency (TUC 2010).

The continued decline of union density (membership) and the decentralisation of collective bargaining in the UK have impacted unions' influence as a representative force and accordingly their ability to influence governments and policy development. While UK trade union penetration for the public sector is 56 percent, in the private sector is only 14 percent (BIS 2012). Climate change has presented an opportunity for unions to reinvent themselves and the Green Workplaces initiative is part of the unions' renewal strategy (European Commission 2011a).

The influence of employer organisations and trade unions over domestic policy and the contribution to the country's targets for GHG emissions will vary in each country. This discussion of the UK context establishes the scope and ability of these organisations to influence policy in Europe, the constraints imposed by the market and that their authority is directly related to their membership strength; these factors are common across all employers' organisations and trade unions.

3.4 The role of civil society in the climate change policy arena

3.4.1 Overview

The literature addressing the role of civil society in the climate change debate is extensive. Academic and institutional interest in the role and activities of civil society increased following the declarations from the 2012 Rio + 20 Conference

and the subsequent 2012 UNFCCC COP 18 in Doha that applauded the contributions of civil society to the debate. Other agencies such as the G20 have since followed suit and the G20 Leaders' Summit, held in St Petersburg in September 2013, permitted civil society the opportunity for input to the formal deliberations (C20 2012).

3.4.2 Civil society

Civil society is the collective term for civil society organisations (CSOs). The World Bank refers to civil society as:

> .. the wide array of non-governmental and not-for-profit organizations that have a presence in public life, expressing the interests and values of their members or others, based on ethical, cultural, political, scientific, religious or philanthropic considerations. Civil Society Organizations (CSOs) therefore refer to a wide of array of organizations: community groups, non-governmental organizations (NGOs), labour unions, indigenous groups, charitable organizations, faith-based organizations, professional associations, and foundations (World Bank 2013, p. 1).

The OECD and UN do not explicitly define civil society but adopt the same broad comprehensive scope as the World Bank. The World Bank reference to civil society is chosen because of its relative clarity, noting that the reason for defining civil society in this research is only to ensure consistency and clarity of understanding. It does not bear on the data collection or analysis and it does not serve the purpose of including or excluding any stakeholders to create a point of demarcation between interests. The organisation, Civil Society Politics, refers to civil society as a sub group of the family of non-governmental organisations

(NGOs) that are not otherwise empowered (CSP 2013)[5]. This distinction is much narrower than generally applied in academic, international and domestic general practice, although its relevance for the purposes of that organisation is not disputed.

While ecological modernisation theorists generally discuss civil society activists in the context of environmental organisations (for example, Mol 2008, Gonzales 2009), in practice the scope and interests of civil society are much broader. The UNFCCC uses the term "observer" to describe those non-member state organisations that are permitted to attend meetings and conferences. These organisations represent a broad spectrum of interests embracing representatives from business and industry, environmental groups, farming and agriculture, indigenous populations, local governments and municipal authorities, research and academic institutes, labour unions, women and gender and youth groups (UNFCCC 2011).

CSOs provide informed advocacy, bring expertise related to their specific interests and provide information that is often otherwise not commonly available. CSOs' contribution to public debate and public service may be sought by government and regulators because of their specialist knowledge and their relationship with a stakeholder group. Government advisory boards may have civil society

[5] Civil society constitutes vast social constituencies anchored in communities. It comprises: family, kinship and friendship networks; household or domestic economies; neighbourhoods and informal social supports; voluntary associations, self-help and support groups; NGOs, charities and social enterprises; cooperatives and mutuals; self-employment, family-enterprises, small businesses; and religion, faith and spirituality. These diverse social forms have three features that are the basis for commonality: relational – they are defined by relationships; associational – they are driven by formal or informal bonds; and voluntary – they are formed without coercion (CSP 2013).

representatives[6] and CSOs may be invited to assist with the delivery of government services[7] and may act as a regulator in their sphere of interest[8].

CSOs can act individually or may form coalitions of organisations with like interests to increase the effectiveness of advocacy. The European Trade Union Confederation (ETUC), with the CSOs European Environment Bureau and Social Platform, campaign for a social and sustainable Europe. These three organisations make annual recommendations to the EU about maintaining a balanced approach to the three sustainability pillars of economic, social and environmental action (ETUC 2007). On matters related to climate change, BusinessEurope acts with the CSO Alliance for a Competitive European Industry (European Commission 2011a). The ACEI's objective is to promote the competitiveness of European industry on a global scale. On climate change, it takes a fully integrated approach to industrial policy by carefully balancing essential climate, energy and competitiveness factors (ACEI 2013).

The fabric that makes up civil society is diverse. The CSO CARE International is a humanitarian organisation fighting poverty: it is a service provider, activist and advocate (CARE 2010). The CSO Global Humanitarian Forum, which wound up in 2012, was formed to address humanitarian challenges including research into the human impacts of climate change. It leveraged the profile of its presiding Chair,

[6] For example, the Australian Government Climate Change Advisory Committee (Combet 2010).

[7] For example, in the UK in 2012 CSOs were used to accredit and up skill installers, and communicate to industry and the consumer the Green Deal initiative (ECA UK 2012).

[8] UK ETS allocation of permits to industry (Dresner *et al.* 2006).

the retired UN Secretary-General Kofi Annan, to create a point of difference that enhanced its authority (Dalber 2009).

CSOs have been prominent in shaping public policy on the environment and climate change. In the UK, the Friends of the Earth (FoE) campaigned under the "Big Ask" banner for a legislative commitment to GHG emission reduction. The World Wildlife Fund (WWF) campaigned for UK energy companies to commit to low emission technology (WWF 2003) and the Carbon Disclosure Project sought the voluntary inclusion of socially responsible investment criteria in the investment decision (Pfeifer and Sullivan 2008). Until the "Big Ask" campaign, the UK Government's climate strategy was a blend of hard policy through tools such as the Climate Change Levy introduced in 2001, the Emissions Trading Scheme (UK ETS) in 2002 and soft policy option of corporate social responsibility initiatives. The "Big Ask" campaign convinced a cross party group of Members of Parliament to table its draft Climate Change Bill in Parliament. The Bill provided a legal framework to manage future emissions (Hall & Taplin 2007). The campaign realised its objective when on 18 February 2008 the House of Lords debated the Bill for the first time. It was finally passed into law on 28 October 2008 (FoE 2008; Lock 2006).

Although EU and member states boast the engagement of civil society in decision-making, in practice the consultation is not always undertaken with a transparent objective. This means that civil society may have little or no influence over decision-making. Many times the consultation is a process used by the agencies to advise interest groups how development is to be undertaken and how they will be affected, to confirm established decisions (Braun 2010; Blackstock *et al.* 2006) or

to legitimise the policy (Scheer and Hoppner 2010). Recent EU directives have addressed this abuse of process to some extent, at least at the higher levels of decision-making (Braun 2010).

Business and industry organisations and trade unions are CSOs but differ from many in that there is awareness across society of what they do and why. This awareness is the product of generations of activism and many in the community have come into contact with them through their engagement in industry or workplace issues, either as management or labour. They also have wide coverage with affiliations that extend across jurisdictions from the international to regional, national, sectoral and the workplace. There are few other categories of organisation within civil society that share these credentials or penetration.

3.4.3 Civil society within the United Nations

Civil society has a significant presence at international climate change negotiation events and is welcomed as a valuable source of specialist knowledge to negotiators (Brazil CSD 2012). The UN system is generally open to contributions and participation by civil society. With Rio + 20, CSOs were invited to make written submissions for inclusion in the compilation document, *The Zero Draft* (UNCSD 2012) and were active advocates during the pre-conference negotiations.

The Rio + 20 *Future We Want - Outcome Document* offered formal recognition of the contribution by civil society declaring that "We, the Heads of State and Government … with the full participation of civil society, renew our commitment to sustainable development …" (UNCSD 2012, article 1). The statement was somewhat misleading as civil society was not a negotiating party and neither was its agreement sought. Additionally, some CSOs did not want to be associated with

the outcome, declaring it fell short of the action they considered necessary (Climate Action Network 2012).

Across the UN and member states, there appears to be a presumption that civil society is ready, willing and able to take on the responsibility that comes with a formalised role in the negotiations. However, it remains that the ability of civil society to act cohesively and collectively has not been tested. Civil society is comprised of many organisations with unique and specialised interests with a way of doing business that is not a natural fit with the formal UN requirements for agreed and consistent process and modes of behaviour. In research on the behaviour and the tactics of CSOs in UN-based policy negotiations, Eastwood (2011) finds that CSOs push the boundaries in negotiations using tactics that are not always consistent with the UN's standard business practices. She also reports that throughout the deliberation process, CSOs work strategically to maintain their independent presence. Against that background, it could be a challenge firstly to achieve agreement among the unique and specialised interests that are CSOs to be part of a discrete homogenous and representative civil society entity, and secondly to achieve participation in a collegiate model that would require them to cede authority to an elected representative(s) of the civil society community.

Different schools of thought have emerged in the debate about what management model is most suitable for the possible representation of the collective interests of CSOs. Golmohammadi (2012) contends that civil society needs to adapt to any requirements of the UN for participation because it is the sole organisation capable of shouldering the sustainability responsibility. He proposes a

participation model similar to the ILO in which business and worker representatives sit at the table with governments and participate in the debate with formal rights to speak, but only governments vote. At the other end of the scale is the existing model of activism typical of independent CSOs that would push the boundaries of accepted practice and protect their independence in the manner portrayed by Eastwood (2011).

The Chair of the UN High Level Political Forum on Sustainable Development (UN HLPF), that in 2012 succeeded the UN Commission on Sustainability, invited CSOs through the UN Major Groups to engage in a process and negotiations that would determine the UN HLPF modalities and format. In response, the Major Groups stated that in their view the full and effective participation of civil society could only be achieved if, as a minimum, procedures were put in place that ensured public disclosure, access to information and public participation. They explained that in practice this would mean Major Groups, and by implication their participating CSOs, having access to all documents and drafts in a timely manner; being permitted to comment on draft reports and receiving an official response; having time allocated for dedicated dialogue; having access to regular meetings with Bureau members; and having access to all meetings at all levels with speaking rights (UNHLPF 2013). At the time of writing this thesis, the Chairs of the HLPF that invited this submission had not responded. Neither had the broader civil society constituency come together to consider the proposal and to establish terms of reference for any further engagement.

The binding nature of any rules for civil society engagement is certain to be tested by the many CSOs to ensure the right to advocate their particular cause is not

compromised. The Major Groups created within the UN system are not official or mandated representative bodies and do not have authority beyond being a contact point and interface with that system. At the climate COPs and events such as the Rio + 20 Conference, CSOs are not bound to the organisation that leads the Major Group, its philosophy or ideology. The exception may be the trade union Major Group, but this is more a reflection of the unanimity of their purpose and their collegiate structure and therefore the advocacy of an agreed manifesto.

The attention to the economic and social issues and the perceived needs of civil society has an effect on the efficiency of the climate change negotiating process. After the 2012 Doha COP, BusinessEurope reported that progress on negotiating issues at the Conference was slow and the process was inefficient (BusinessEurope 2012). The Climate Group wrote of the weak outcome and stated that some tough issues were simply ignored (Ryan 2012). These statements parallel the UNFCCC COP 17 2011 situation in Durban that was criticised because of the deferral of decisions to the following COP in Doha and for otherwise making no decisions that helped bridge the ambition gap (Climate Action Network 2012). This lack of material progress fostered little confidence that the negotiators would be able to reach agreement on a successor to the Kyoto Protocol (Rajamani 2012). However, the 2013 UNFCCC COP in Warsaw offers some hope with a commitment made to resolve an agreement by the 2015 UNFCCC COP in Paris (UNFCCC 2013).

The decision to include the employment and social dimension of climate change in the international climate agreements has created an unexpected paradox. While the negotiating parties to the agreements were debating the process to formalise the role for civil society, civil society was experiencing barriers to effective

advocacy. The Bali Action Plan (UNFCCC 2007a) operationalised the employment and social dimensions of adaptation and mitigation policy, measures seen as equitable and necessary but, with hindsight, possibly not achievable under the model in place, as this model was established with the single objective of managing the pace of change in the climate. There are many issues that point to the need for a review of the governance and institutional arrangements to manage climate change and sustainability and to ensure that CSOs can contribute effectively and efficiently to the debate.

3.5 Conclusion

This chapter has provided a discussion of the issues related to the contention and research question addressed in this thesis. It has established the connection between climate change policy and employment and the workplace: a connection that occurs as a consequence of environmental concerns across the community and industry and a commitment through international climate and sustainability agreements to decent work and a just transition. The chapter indicates there is a requirement for labour market planning and that there will be changes to skills and occupational profiles. Skill shortages could be a barrier to timely adaptation to climate change.

The dichotomy between the research addressing climate change policy and that addressing green jobs is also pointed out. The green jobs research is well informed but only within its remit, which is jobs and employment that are directly impacted by climate change such as work in the renewable energy sector. The contention for this research is that the entire labour market will be impacted and that policy needs to address that impact.

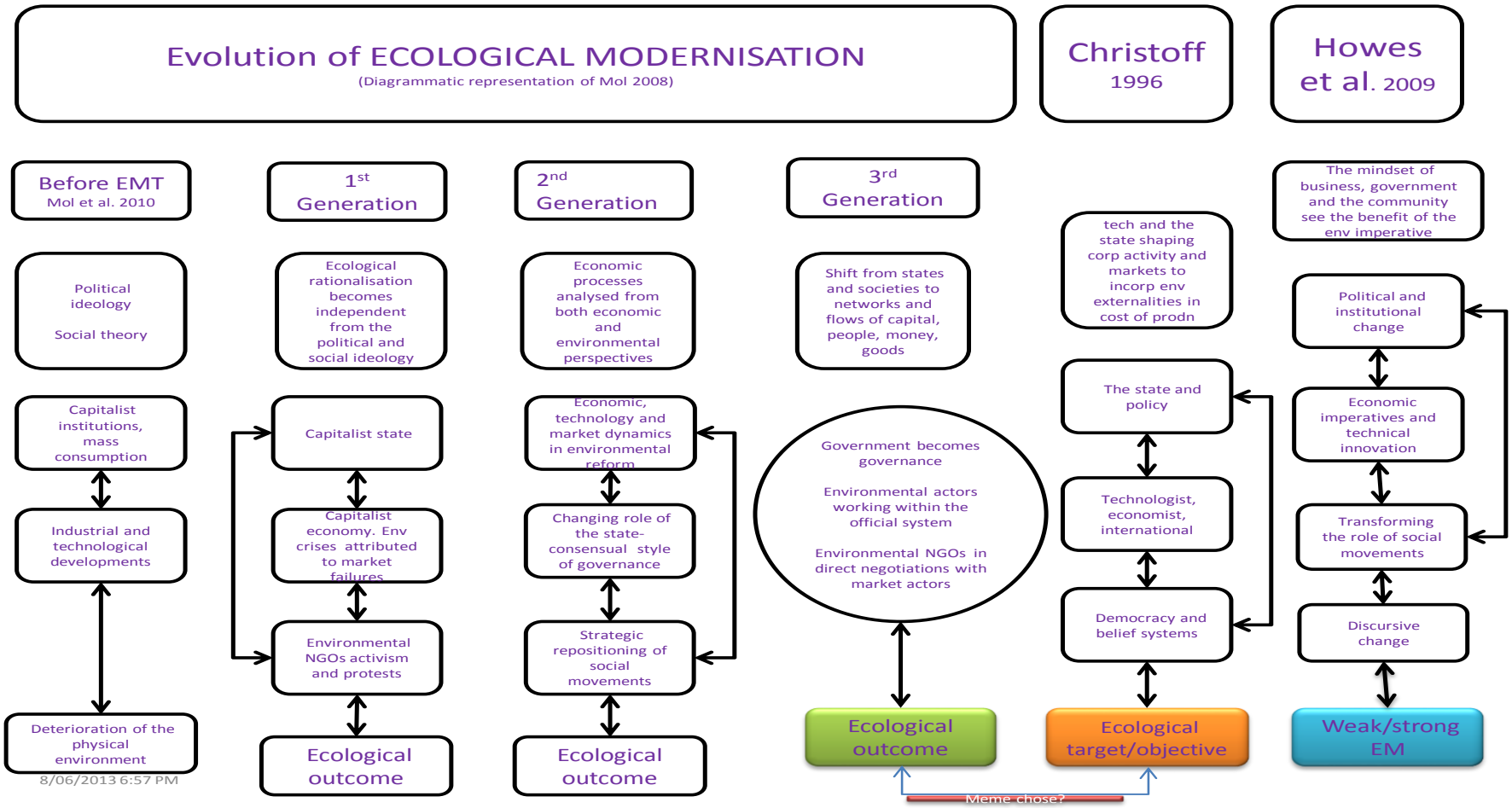
The chapter has also established that in practice labour market planning and skills policies are not receiving the attention required to ensure the labour is available in the numbers and with the skills required. The OECD observes while there is agreement about the impact of climate change on employment, there is disagreement about what to do about it. While there is endorsement for the involvement of employers' organisations and trade unions, the practical demonstrations are limited, providing only vignettes of the contribution to the policy development process. The next chapter describes the theoretical framework of ecological modernisation and the path to its operationalisation.

4 Ecological modernisation theory

4.1 Introduction

The previous chapter, Chapter 3, discussed aspects of the international climate policy process related to employers' organisations and trade unions. This chapter discusses the theory of EM and explains why ecological modernisation (EM) is the most valid theoretical framework for both this research and as a model for framing climate change policy. It provides a specific theoretical discussion of ecological modernisation (EM) in its historical and current context, outlining its development and exploring its operationalisation from a theoretical concept to a practical framework that can guide public policy. It also contains a representation and discussion of EM as described by key theorists in the field, which is a useful contextualisation of both the evolution of EM, the variations in the interpretation of the components of EM and their interaction leading to the competing definitions explored in detail later in this chapter.

Figure 4-1: The evolution of ecological modernisation



4.2 Overview

4.2.1 Ecological modernisation theory (EMT)

A representative description of ecological modernisation is the relationship between economics and innovation, the interventions of the nation-state and the involvement of non-state actors in decision-making to achieve environmental outcomes (Mol & Sonnenfeld 2000). EM was chosen as the theoretical model for this research because of its increasingly common use in environmental policy analysis (Christoff 1996; Spaargaren *et al.* 2009, Howes *et al.* 2010) and because it provides an appropriate framework to explore the roles of actors in society in the process towards achieving best practice environmental outcomes. In particular, this research explores whether the public policy process as framed in ecological modernisation should consider the employment and workplace impacts of climate change policy and the interventions of employers' organisations and trade unions.

Ecological modernisation emerges from political and social sciences and has established its credentials in the environmental policy field, shaping the discourse of environmental politics (Cohen 1997). Howes *et al.* (2010) observe that since the 1990s there have been three main discourses in the field of environmental politics: administrative rationalism, economic rationalism (neo-liberalism) and ecological modernisation. They find that ecological modernisation as a theoretical avenue has strong relevance to environmental policy, planning and management systems in many industrialised countries and as such provides a suitable framework within which to explore the theory and the practice.

In Frederick Buttel's (2000) examination of the ascendance of ecological modernisation as an influence over environmental policy, he refers to it as a "well-

developed and highly-codified social theory" (p. 58) and as a theory pertaining to politics and the state. Maurie Cohen (1997) argues that the two major social theories shaping the discourse of environmental politics are Ulrich Beck's (1992) risk society theory and ecological modernisation. Understanding how the critical risk issue is introduced into public policy was the subject of research by Lange and Garrelts (2007), who contend that ecological modernisation is the most effective theoretical approach for solving environmental policy problems. Lange and Garrelts (2007) research was undertaken in response to the natural disaster concern of flooding, the policy considerations were safety and risk and the management tools were administrative authority and public policy implemented through statute.

The ecological modernisation approach is still to establish its utility beyond the industrialised economies. The work of Sonnenfeld and Mol (2006) in eleven (11) market-oriented industrialised and industrialising states in Asia finds positive indications of the relevance of EM. However, they considered their study was inconclusive, believing the data was unreliable and/or not consistently available. Ecological modernisation has been successfully applied to the development of environmental policy in some regions in China and analysis suggests the results could be broadly replicated in other regions (Marsden *et al.* 2011). EM theorists acknowledge that research is still required to embed the ecological modernisation approach in different economic, cultural and political situations (Spaargaren *et al.* 2009).

4.2.2 Economics, innovation and the interventions of the nation-state

Ecological modernisation contends that the relationship between economic activity and innovation in technology and the interventions of the nation-state and civil society and are required to achieve best practice environmental outcomes. Joseph Huber (1991) believed that the legal foundations of environmental policy and regulation by authorities are absolutely indispensable and provide the stability factor important in the business decision-making process to innovate, a view he reiterated many years later (Huber 2008). He contended that the nation-state is the essential counterbalance to the unfettered behaviour of the market and its role as an active regulator is fundamental to effective environmental policy (Huber 1991), views supported by Hajer (1995), Sonnenfeld (2000) and Cohen (1997). The two are not mutually exclusive, and it is argued by Ashford (2002) that the optimum situation is one where the nation-state provides clear standards and policy goals while allowing flexible means for industry to achieve its goals.

While articulated in different ways by theorists, there is a consistent thread that binds the contribution of enterprise with strict monitoring of performance by the state. Nicholas Stern (2007) contends that effective climate change adaptation may require governments to address specific market failures and barriers. The research conducted by Esty and Porter (2005) finds that environmental results are not merely a function of economic development but also a consequence of policy choices. They conclude from their research that, amongst other things, regulatory stringency and regulatory structure are highly significant in the achievement of the environmental outcome. In his seminal work "The competitive advantage of nations", Michael Porter (1990) contends that experimentation by

the nation-state with policies to promote national competitiveness "usually ends up only undermining it" (p. 73) and, by inference, that industry left to its own devices will deliver a competitive economy. He subsequently qualified this opinion, observing that the market on its own would not implement the strategies necessary to deliver environmental outcomes without a regulatory push (Esty and Porter 2005).

Porter believes that the market "makes a false assumption about competitive reality–namely, that all profitable opportunities for innovation have already been discovered, that all managers have perfect information about them, and that organizational incentives are aligned with innovating" (quoted in Porter & van der Linde 1995, p. 127). Stern (2007) makes a similar observation, stating that "in the absence of public policy there are limited or no returns to private investors for [serving the public good]" (p. 27). Esty and Porter (2005) find that environmental policy and the strictness of regulatory regimes shape environmental performance. Significantly, they also find that environmental performance appears to be positively correlated with competitiveness (Esty & Porter 2005).

The above commentators contend that the market on its own will not make the decisions to invest and innovate to develop the technologies necessary to exploit the alternative energy sources as viable alternatives to fossil fuels. They also acknowledge that neither does regulation on its own inspire investment and innovation. The progress toward specified ecological outcomes relies on a cooperative and mutually beneficial relationship between the nation-state with actors in the economy and investors in innovation.

4.2.3 Civil society

EM theorists' references to civil society are often directly or by implication a reference to environmental activists. In his discussion of EMT, Mol (2008) extends his consideration of the role of non-state actors in EM to the activism of NGOs and institutionalised players such as Greenpeace, Friends of the Earth, the World Wide Fund for Nature and the "anti-globalisation movement" (p. 199). Gonzales (2009) similarly infers that civil society means environmental activists, explaining that civil society is a "more democratic venue than the state because it is relatively unconstrained" (p. 211) and that as civil society the actors are not subordinated to state policy. Dryzek *et al.* (2009) offer a more expansive and inclusive view, discussing the interaction among a broad array of political, economic and social institutions resisting subordination of ecology to economics.

Accepting the association of EM with environmental activists and noting that some theorists do not reference other interests, neither do the theorists make it exclusive or a precondition for recognition as a civil society organisation in ecological modernisation. Fisher *et al.* (2009) moved to bridge the apparent gap between the scope of civil society in the theory of EM and the practice when they commented about the spread and diversity of civil society interests at the 2009 UNFCCC COP in Copenhagen. The UNFCCC has given formal recognition to almost 1200 organisations that it describes as civil society, including business and industry, environmental groups, farming and agriculture, indigenous populations, local governments and municipal authorities, research and academic institutes, labour unions, women and gender and youth groups (UNFCCC 2011). Golmohammadi (2012) conceives of civil society as a collective, referring to the

UN Major Groups as their representative organisations. He proposes a management model for their collective representation similar to the ILO in which governments and the elected business and worker representatives have equal rights and equal representation.

In the European Union system, civil society is understood in the broader context and is afforded a statutory role in the formal policy process. Article 300 of the Treaty that forms the European Union (EU) provides that "the European Parliament, the Council and the Commission shall be assisted by an economic and social committee (EESC) exercising an advisory function and … shall consist of representatives of organisations of employers, of the employed and of other parties representative of civil society" (European Union 2010, Art. 300). The Treaty states that the institutions of the EU must consult with the EESC on matters that include the environment and climate change (Europa 2012b).

Theorists agree that EM should be the subject of further research and that "little is known still on how, to what extent and how successfully environmental interests are included in all kind of economic, cultural and political practices…" (Spaargaren *et al.* 2009, p. 511).

4.2.4 The international influence

The Brundtland Commission of 1987 (WCED 1987), the Rio Summit of 1992 (UNCED 1992) and the wave of environmental events that followed created the expectation of collective international action. They also were a significant influence over domestic environmental policy. In a review of the influence on environmental policy from these events, Mol *et al.* (2009) comment that in both

normative and historical terms, ecological modernisation has demonstrated that sound ecological conditions and good economic performance should co-exist. Spaargaren *et al.* (2009) add that the transnational arrangements crosscut the divisions of tasks across the institutions of the state, market and civil society actors whose responsibilities were now to be shared and possibly subordinated to international institutions.

Few would argue the validity of the assessment by Spaargaren *et al.* (2009), yet in practice there are signs the transnational model may not be able to deliver the targeted ecological outcome and that process or the process has encumbered the ability of the domestic stakeholders. The UNFCCC management of the COP 15 in Copenhagen was criticised because it served to disenfranchise civil society from the dialogue and diminished their opportunity for access to officials (Fisher 2010). This, with the inability of the subsequent UNFCCC Conferences to agree to increased action to mitigate climate change or commit to the next generation of international climate agreements, has seen the focus of civil society action shifting away from such international events. Lauren Eastwood (2011) observes that "government participants and civil society actors alike are starting to admit that, as international negotiations stall out on the global level, local actions and smaller-scale projects will be the locus of climate change mitigation and adaptation" (p. 35).

At the core of ecological modernisation theory is the nation-state as the ultimate regulator that is influenced by the international commitments which have become a major influence in domestic climate change policy. Just as the transnational arrangements have been introduced as a coordinating factor in the division of

tasks, so one expects their influence could be diminished if the prevailing focus of activity were to resettle locally.

4.2.5 Measuring policy effectiveness

Esty and Porter (2005) undertook a quantitative analysis of policy, the results of which have been perpetuated by Esty (2012) as the Environmental Performance Index. Ecological modernisation theorists do not measure outcomes quantitatively as absolutes, but as stages along the continuum from weak to strong (Christoff 1996; Howes *et al.* 2010).

Tables 4-1a to d present a selection of the measurement tools offered by theorists. Examples of weak and strong EM as described by Howes *et al.* (2010) and Christoff (1996) are shown in Tables 4-1a and 4-1b. In Table 4-1c Mol (2001) compares the EM framework with the Treadmill of Production and explains that "the two perspectives differ in terms of what might be called "absolute" (Treadmill of Production) and "relative" (Ecological Modernisation) … that economic production and consumption have to become completely sustainable" (p. 203).

A simplified explanation of the ends of the scale drawn from these tables represents strong EM as a collaborative deliberative process where the state provides market and civil society actors' access to all the information and institutions. The state then regulates and acts to ensure compliance. Moderating themes are that strong EM allows multiple possibilities with EM providing the orientation, and that it has an international perspective. Weak ecological modernisation is represented as less collaborative, the state regulates to facilitate the market, the focus is national rather than international and the strategy is hegemonic rather than offering multiple opportunities.

Janicke's (2008) EM-friendly framework of environmental regulation (shown in Table 4-1d) is a fair representation of the vast middle ground between these representations of weak and strong but has a clear leaning to strong EM. Mol (2001) in his comparison of EM with the Treadmill of Production concept also sits in the middle but with a leaning to the weaker. While these measurement tools are appropriate as descriptive representations of policy rating options within the framework of the theory, they do not sufficiently inform the policy development process and the interventions necessary to be sure about the environmental outcome.

The terms "weak" and "strong" are taken from the literature and are used in the absence of other understood nomenclature. Mol (2001) holds the view that EM is about relative improvement in environmental conditions rather than absolute sustainability. Christoff (1996) argues that weak and strong are measured by the choices made. Hajer (1995) speaks of EM as a discourse that recognises the structural character of the environmental problematic and institutions can internalise the care for the environment. Howes *et al.* (2010) speak of a situation where ecological principles are seen by the state, market and civil society actors as the required policy goal of both institutions and business. The debate may be guided by consideration of the outcomes that are expected from the policy initiatives. The policy may be structured to deliver a strong EM outcome, or the outcome may be the state's ecological target. The ecological target for the purposes of this discussion is the outcome sought by the state from its sustainability and climate change policy. In the EU this target is reflected in its EU climate and energy package, while in the UK it is the requirements of its Climate

Change Act 2008 and related legislation. For this research, the findings from the literature review and the case study will be analysed to determine if those findings conform to an EM model, and if so, the policy framework and whether it represents a version of weak or strong EM, or maybe the optimum.

As in ecological modernisation, in climate change policy the appropriate or optimum policy is influenced by many things, including the national, cultural, economic, social and political contexts. Within these parameters there are no absolute measures, i.e., actions that are correct in all situations, merely what is achievable and appropriate to the circumstances.

Table 4-1a: Ecological modernisation as viewed by Howes *et al.*

	Weak EM	**Strong EM**
View of the environment	Economist and utilitarian	Ecological
Role of the state	Market facilitation, information dissemination, minimum state intervention	Substantial state intervention, institutional restructuring, reforms to economic and regulatory policies
Policy approach	Instrumental	Communicative
Decision-making style	Technocratic/closed decision-making by economic and political elites	Deliberative democratic/open, with participation and involvement
Scale of focus	National focus on developed nations	International
EM strategy	Hegemonic	Diversifying, multiple possibilities with EM providing orientation

Source: Howes *et al.* (2010)

Table 4-1b: Ecological modernisation as viewed by Christoff

Weak EM	**Strong EM**
Economistic	Ecological
Technological	Institutional/systemic
Instrumental	Communicative
Technocratic/neo-corporatist	Deliberative democratic/open
National	International
Unitary	Diversifying

Source: Christoff (1996)

Table 4-1c: Environmental change versus economic continuity

	Treadmill of production	**Ecological modernisation**
Kind of radicality	Economic radicality	Environmental radicality
Environmental Improvements	Absolute sustainability	Relative improvements
Assessment of environmental change	Window dressing	Real changes
Relationship between changes analysed and changes proposed	Weak relation	Strong relation
Main emphasis	Institutional continuity	Institutional transformations

Source: Mol (2001)

Table 4-1d: Ecological modernisation and innovation-friendly framework of environmental regulation

Policy objective	Policy content
Instruments are EM and innovation friendly if they:	• Provide economic incentives • Act in combination • Are based on strategic planning and goal formulation • Support innovation as a process and take account of the different phases of innovation/diffusion
A policy style is EM and innovation friendly if it is:	• Based on dialogue and consensus • Calculable, reliable, and has continuity • Decisive, proactive, and demanding • Open and flexible • Management oriented
A configuration of actors is EM and innovation friendly if:	• It favours horizontal and vertical policy integration • The various objectives of regulation are networked • The network between regulator and regulated is a tight one • The relevant stakeholders are included in the network

Source: Janicke (2008)

4.3 Operationalising ecological modernisation

4.3.1 Operationalising ecological modernisation

Sonnenfeld (2000) observes that the "first step in examining the applicability of ecological modernisation theory … is formally to define and operationalise the concept of EM" (p. 236). Although this is an informed observation, there is little evidence to demonstrate that the concept of EM has been operationalised. Discussions that address the operationalisation of EM are sparse and empirical evidence that it has been operationalised are limited to case study demonstrations. Accordingly EM remains a social theory that is still to be developed to the stage where the requirements for its operation and the process of implementation are clear.

The failure to operationalise the theory has left the theorists open to the criticism that they have not shown that using EM as a methodological framework leads to ecological improvements or transformation or that it reduces the direct impacts on the environment or the pace of increase in production. York and Rosa (2003) contend that EM theorists place a greater focus on the institutional transformations than the consequences of those transformations. Practitioners may look for more from ecological modernisation than is provided by the theorists. Some guidelines have been established that derive from implemented programs that are deemed consistent with EM, but no further checklist of considerations or performance criteria has been developed.

Christoff (1996) argues that the competing definitions in EM are a factor that inhibit its operation, and there are aspects of EM that are interpreted differently within the literature. Additionally, the application of EM is hampered by a lack of clarity about the preferred steps to guide the process of its operationalisation. While established as one of the main discourses in the field of environmental politics (Howes *et al.* 2010), supporters of the theory are divided on the implementation strategies and the form of the outcome to be achieved.

4.3.2 Standardising the competing definitions and terms

This section develops the basis of the process to operationalise EM theory. It addresses the factors identified by Christoff (1996) and others about competing definitions and the use of terms that have different applications. The work to standardise the terms and their application leads to identification of the possibility that there may be more than one outcome from the application of the theory.

4.3.2.1 Ecological modernisation as a theory

While ecological modernisation is adopted as the theoretical framework for this research, there are multiple descriptions of EM that are a rich source of diverse opinion. A list of some of the theorists' conceptualisations of EMT is shown in Table 4-2. These conceptualisations consider EM as a general descriptor of trends (Cohen 2000), a discourse that recognises the structural character of the problematic (Hajer 1995) and a centripetal movement of ecological interests, ideas and consideration in the States institutional design (Mol 2008). Ashford (2002) provides a conditional complementary view of EM, adding the requirement for the involvement of a broad array of stakeholders. This research concludes that the varied conceptualisations of EM do not blur its usefulness, a concern expressed by Christoff (1996) but rather add to the complexity of the task of its operationalisation.

Ecological modernisation (EM) is variously termed a theory (Ashford 2002), a concept (Sonnenfeld 2000), a discourse (Hajer 1995, Howes *et al.* 2010), a normative theory and a political program favouring a particular set of policies (Mol 2001; Langhelle 2000). Buttel (2000) describes EM as a distinctive social theory with the potential to create a coherent literature through proposition testing. For the purposes of this research project, EM is defined as a theory that embodies general and/or abstract principles concerned with the relationship between the environment and economy. Across all of the differing views of what EM is and does, each of the conceptualisations are built around the elements of innovation, the state, market and civil society. Mol and Sonnenfeld (2000) describes EM as the relationship between economics and innovation and the

interventions of the nation-state and non-state actors to aid decision-making in order to achieve environmental outcomes. Their description is a pithy and cohesive offering that broadly accommodates the range of perspectives presented by EM theorists. It captures each of the four elements common across the views identified above.

Table 4-2: Conceptualisations of ecological modernisation

Theorist	Definition of EM
Cohen (2000)	Defines EM as a term adopted as a general descriptor of trends in the application of science and technology to environmental problems and the efforts to reconcile conflicting objectives between responsibility for the environment and continual economic expansion
Hajer (1995)	Conceptualises EM as the discourse that recognises the structural character of the environmental problematic but nonetheless assumes that existing institutions can internalise the care for the environment
Howes *et al.* (2010)	Speaks of a situation where ecological principles are seen by the state, market and civil society actors as the required policy goal of both institutions and business
Janicke (2008)	Considers EM a systematic eco-innovation and its diffusion
Langhelle (2009)	Conceives of EM not so much a set of sociological theories but rather as a political program favouring a particular set of policies
Mol (2001)	Contends that the notion of ecological modernisation can be seen as the social scientific interpretation of environmental reform processes at multiple scales in the contemporary world. Ecological modernisation studies reflect how various institutions and social actors attempt to integrate environmental concerns into their everyday functioning.
Mol (2008)	States that the basic idea of EM is that at the end of the second millennium, modern societies witness a centripetal movement of ecological interests, ideas and considerations in their institutional design
Mol and Sonnenfeld (2000)	Refers to ecological modernisation as the relationship between economics and innovation, the interventions of the nation-state and the involvement of non-state actors in the decision-making to achieve environmental outcomes
Simonis (1989)	Resolution of environmental problems through harmonising ecology and economy
Ashford (2002)	Tenets of the still evolving EM theory that have been melded into the following theory: a. Unregulated capitalism is responsible for the present ecological and environmental problems, and this is partly because the prices of goods

	and services do not adequately represent the social cost of production and consumption b. Historically command and control regulation has been only partly successful in correcting market failures because it proved inflexible, it underutilised economic instruments, and it focused on end-of-pipe approaches rather than on precautionary rather than preventative or precautionary cleaner technologies c. Under thoughtful reflexivity, the present and enlightened industrial actors can succeed in advancing the material wellbeing of citizens, contribute to their nation's competitiveness, and can also contribute to the necessary scientific and technical changes (innovations) in products, processes, and services to adequately meet the environmental challenges-especially if a broad array of stakeholders is involved

4.3.2.2 The state, market and civil society

Theorists are split over the role of regulation and the uncontrolled influence of market forces. Views range from the need for strict command and control regulation to provide clear standards and goals (Hajer 1995, Sonnenfeld 2000, Cohen 1997) to allowing flexible means for industry to adapt (Ashford 2002; Howes *et al.* 2010; Porter and van der Linde 1995). On civil society, they mostly advocate the need for open and inclusive decision-making while retaining its independence (Howes *et al.* 2010; Ashford 2002). Esty and Porter (2005) contend that while the environmental achievements of the state are the product of policy choices, those choices must reflect the distinctive political, institutional and cultural features of a region, the national economic importance of the sectors involved and the extent of the environmental impact on those industries.

The OECD (2013a) and GGKP (2013) reports on green economy growth approaches have synergies with EM. However, one exception is that in the OECD and GGKP approaches civil society is an implied contributor whereas EM theorists and the standardised description of EM adapted for this research would point to civil society as an identified contributor. The OECD (2013a) report acknowledges the need for technology and innovation, the role of the state, the market and

ecological consciousness. The GGKP (2013) report at page 3 speaks in terms of the fusion of economic and environmental pillars into a single intellectual and policy planning process to achieve green growth, or in EM terms the harmonisation of the economy and the environment. The EM model goes further and specifies the role that civil society has in the achievement of the ecological outcome.

4.3.2.3 The environmental outcome

Some theorists such as Sonnenfeld (2000), Howes *et al.* (2010) and Pellow *et al.* (2000) consider that a further component essential in EM is ecological consciousness, that is, acceptance by institutions, business and society of the responsibility to manage the environment. This does not present a different construction of EM but rather these theorists are making explicit what is implicit in the descriptions of EM by Mol and Sonnenfeld (2000) and others (Table 4-2). It is proposed for the purposes of this research that ecological consciousness be recorded as a component of EM.

One feature of Mol and Sonnenfeld's (2000) description of EM is that application of the theory delivers a result that they identify as the environmental outcome. It is not helpful that the term "environmental outcome" is not defined in the literature and nor is it sufficiently commonly used to assume an accepted understanding. Descriptions of the outcome that are considered to have greater utility are: reconciliation of economic growth and ecological problems and harmonisation of economy and the environment (Hajer 1995; Sonnenfeld 2000; Pellow *et al.* 2000; Mol 2001; Simonis 1989). The term "harmonisation of economy and the environment" is concise and descriptive and is therefore adopted in this research to describe the outcome.

4.3.2.4 The standardised description of EM

In order to arrive at a standardised description of EM, it is useful to adapt Mol and Sonnenfeld's construction of EM to embrace the range of considerations identified by the theorists. The standardised description of EM proposed for this research is "the relationship between the market and innovation, and the interventions of the state, civil society and ecological consciousness on decision-making in the pursuit of harmonisation of the environment and the economy."

4.3.2.5 The standardised terms within EM

The theorists' discussions and social theory literature do not apply the language of EM consistently, and often use different terms when describing the same concepts. This creates confusion and establishes a potential barrier to the theory's operationalisation. For instance, the term "institution" is sometimes used as a reference to institutions of the state, while in other discussions it is a reference to institutions of the market. In order to address the problem created by the multiple interpretations that Christoff (1996) contends blur its usefulness and are a potential barrier to its operationalisation, it is proposed to create a standardised definition for each of the terms, which remaining true to the import of the terminology in the context intended by the theorists. These definitions are discussed below.

- *Relationship* is a reference to the interaction between the components of EM to deliver the outcome, where a change in one may lead to a change in any and all of the others and the outcome.
- *Innovation and technology* is adopted as the standardised term to represent the intentions of the theorists when they speak of science (Cohen 2000),

science and technology (Mol and Sonnenfeld 2000) and technological innovation (Howes *et al.* 2010, Ashford 2002). The meaning of *innovation and technology* adopted for this research is the application of new solutions and the practical application of knowledge (Merriam-Webster 2013).

- *The state* is also variously described in EM with some authors focusing on particular attributes such as the state as the regulator, change agent, institution (Howes *et al.* 2010; Janicke 2008; Dryzek *et al.* 2009). This research defines the state as the agent for shaping the structures and policies of the state and other national and local actors in social life including business, politics and civil society (Meyer *et al.* 1997).
- *The market* is described in EM as pursuit of the economic imperative (Howes *et al.* 2010) and application of economic rationality (Dryzek *et al.* 2009). The meaning adopted for this research is the market as the area of economic activity in which buyers and sellers come together and the forces of supply and demand affect prices (Merriam Webster 2013).
- *Civil society* is described in some instances quite differently (see Section 3.4 for a more detailed discussion). The discussion seeks to reconcile the EM theorists' general representation of civil society as environmental activists with the OECD, UN and World Bank's broader considerations of civil society as a range of stakeholders and interest groups that are involved and influential over public policy. The meaning of civil society adopted for this research is the wide array of non-governmental and not-for-profit organisations that have a presence in public life, expressing the interests and values of their members or others, based on ethical, cultural, political, scientific, religious or philanthropic considerations. Civil society therefore

refers to the wide of array of organisations including community groups, non-governmental organisations (NGOs), labour unions, indigenous groups, charitable organisations, faith-based organisations and professional associations (World Bank 2013).

- *Ecological consciousness* was selected over other terms that are used in EM such as discursive change (Mol and Sonnenfeld 2000; Howes *et al.* 2010), Christoff's (1996) hegemonic progress and Cohen's (2000) epistemological perspective. The meaning of ecological consciousness adopted for this research is the consideration of ecological principles in the desired policy goals of both institutions and business (Howes *et al.* 2010, Christoff 1996, Cohen 2000).

As mentioned in the introduction to this section, standardisation of the terms removes one of the barriers to the operationalisation of EM.

4.4 Ecological modernisation theory: The outcome

4.4.1 The pathways to the environmental outcome

For EM to be in a form that permits policy options to be selected and for the implementation of a monitoring and evaluation program, it is necessary to create a specification of the outcome format. This specification will take into account whether the measure of harmonisation of the economy and the environment is to be judged in the absolute or whether it is a measure of what is achievable in the particular circumstances of a country. In many countries, the outcome specification format reflects the commitment by the state to international climate

change agreements. In Europe the outcome specification is the Climate and Energy Package to deliver reduced emissions and energy security (Europa 2010a).

Analysis of theorists' conceptualisations of EM lead to the conclusion there is not one but three pathways to three different outcome specifications. The outcome specifications range from the strong environmental imperative to the more socially balanced imperative of decoupling economic growth from environmental harm. Specifically, the three pathways that lead to outcomes are:

- harnessing science and the environment to address contemporary ecological concerns (Cohen 2000)
- decoupling economic growth from environmental harm where success is measured as progress toward absolute sustainability (Howes *et al.* 2010)
- decoupling economic growth from environmental harm where success is measured as progress toward a specified outcome or a target (Mol 2001).

These outcomes are referred to as Outcome 1, Outcome 2 and Outcome 3 respectively. Table 4-3 demonstrates these three pathways as framed by a number of theorists. Table 4-4 then charts the interventions along the pathways to achieve the outcome in the context of the components of EM.

The pathway to Outcome 1 reflects a strong environmental requirement to which other considerations are subordinate. The policy framework to support these objectives could involve innovation from science and technology, institutional reshaping by the state, and transforming ecological consciousness through the reflexive process of social learning. Policy interventions could be waste reduction and elimination, resource recovery and reuse, with long-term objectives as

resource conservation and clean production[9] (Sonnenfeld 2000, Janicke *et al.* 1997, Hajer 1995, Cohen 2000).

The pathways to Outcomes 2 and 3, rely on a common policy framework described by Maarten Hajer (1995) as making environmental degradation calculable, environmental protection as a positive sum game, and the reconciliation of economic growth with the ecological problems. The policy interventions described by Howes *et al.* (2010) include technological innovation, engaging with economic imperatives, political and institutional change, transforming the role of social movements and ecological consciousness. Although the policy framework for Outcomes 2 and 3 are common, the pathways differ in their focus. The pathway for Outcome 2 has a focus on process-oriented policy, whereas the pathway for Outcome 3 addresses the outputs required from the policy choices.

The finding that there is not one single scenario to be considered in the operationalisation of EM but three is critical in the context of this research project, as it is only by committing to an outcome that the state can make the effective policy interventions that will lead to the required environmental outcome. The choice of outcome will dictate whether policy requires a strong science orientation, whether policies will be seeking to deliver progress toward absolute sustainability or whether they deliver a target such as GHG emission reduction.

[9] Clean production is production without (un-recycled) waste or emissions (Janicke *et al.* 1997)

Table 4-3: Theorists' objective for ecological modernisation

	Outcome 1	**Outcome 2**	**Outcome 3**
Huber (1991)		X	
Hajer (1995)	x		
Christoff (1996)		X	
Cohen (1997)	x	(x)	
Jokinen (2000)			x
Pellow *et al.* (2000)			x
Sonnenfeld (2000)	(x)		x
Mol (2001)			x
Janicke (2008)		X	
Howes *et al.* (2010)		x	

x Primary influence over the outcome

(x) Secondary to the primary influence over the outcome

Table 4-4: Scenarios for the achievement of ecological modernisation

Pathways			**Outcome 1**	**Outcome 2**	**Outcome 3**
Innovation and technology	a				x
	b		x	x	
State	a				x
	b		x	x	
Market	a			x	
	b				x
Civil society	a				x
	b*	Other			
		Environ		x	
Ecological consciousness	a				x
	b		x	x	

a & b: Indicates the relative priority where b is the higher priority

*Other and Environ draw a distinction between other civil society organisations and environmental activists.

The next section in this chapter develops the specification for the operationalisation of EM for this research, adding a context to the theory that permits the definitions can be honed and the theory tested and benchmarked.

4.5 Specification for an operationalised EM

4.5.1 Domestic policy selection

4.5.1.1 Policy choices

A range of approaches to environmental policymaking and for assessment of sustainability have been provided by the OECD (2013a), GGKP (2013) and the World Bank (2013s). The GGKP's project to develop green growth and green economy indicators (GGKP 2013) is intended to assist countries in the design, implementation and evaluation of policies and arguably has the most comprehensive range of considerations produced by the three organisations. The GGKP set of diagnostic indicators have parallel features with the EM model and are reproduced in Appendix 3.

The OECD (2013a) makes the point that integrating economic and environmental policies is not easy and requires leadership, a vision and cooperation across ministries. The environmental policy instruments it proposes are in three categories: taxing, pricing and mechanisms that value natural assets; regulations, standards and information policies; and a set of cross-cutting policies to stimulate green growth in a systemic way. The cross-cutting policies referred to are investment, research and development; labour and skills; and climate adaptation (OECD 2013a; OECD 2013b).

OECD (2013a) research project *Agenda for National Action on Green Growth* finds that progress along the pathway to achieve a chosen outcome requires commitment to a vision and plan for green growth. The process to achieve the outcome involves the design, reform and implementation of policies that stimulate green growth, strengthening governance, and developing the capacity for sound decision-making to monitor and enforce policies. Some of the strategies and considerations associated with the OECD approach are shown in Figure 4.2.

Figure 4-2: Agenda for national action on green growth in developing countries

Source: OECD (2013)

The Green Growth Knowledge Platform (GGKP) has also undertaken authoritative research into the subject of green growth. The GGKP is a global network of researchers and development experts sponsored by the Global Green Growth Institute, OECD, UNEP and World Bank that identify and address knowledge gaps in green growth theory and practice. The GGKP research speaks of the pathway

and the process in the same broad terms as the OECD, mentioning the five well-recognised stages of the public policy development process: agenda setting, policy formulation, decision-making, policy implementation, and monitoring and evaluation (GGKP 2013). Policy formulation is also best guided by a process that is evidence based, which means that it has rigour, is inclusive and can be evaluated. The evidence-based approach of EMT is discussed in the next section, Section 4.5.1.2.

Two points in the OECD (2013a) report merit comment here. These are firstly, the finding that labour and skills are important issues to be included in both short and long-term climate change planning; and secondly, that targets are beneficial in climate change planning but if there are too many there is the potential for conflicting policy. Addressing the second first, the UK has set itself many targets, making commitments to international and EU agreements and its own government's further targets. An OECD (2010) review of UK climate change policies added that more could be done to align the economic and environmental objectives and the integration of programs across portfolios. Additionally, monitoring of climate policy effectiveness by the UK Government's Committee on Climate Change has found that some programs are at the limits of their capacity and that step change is required in the suite of policies if all of the set targets are to be met (DECC 2011f). Climate change planning has also had an impact on labour market and skills issues. The OECD (Miranda and Larcombe 2012) and ILO (Strietska-Ilina *et al.* 2011) find that the UK labour market and skill development policies are weak and Gleeson *et al.* (2011) find that the anticipated shortage of labour and skills in the construction sector will create barriers to service delivery.

Whether these issues arise as a consequence of the proliferation of commitments to reduce GHG emissions or a flaw in the process of policy is unclear but they should be regarded as potential barriers to the achievement of the targeted outcomes.

4.5.1.2 Evidence-based policy

This section presents an approach to public policy development in an EM framework that is based on evidence and processes that have rigour. Adapting an evidence-based approach could provide one of the bridges necessary to operationalising EM. EM introduces policy considerations that are not necessarily informed by hard physical data, such as the role of civil society, the value to policy implementation of a supportive attitude of the community, and questions raised by stakeholders about validity and the ability of government to monitor outcomes.

The GGKP (2013) contends that green growth and green economy policies need solid evidence-based foundations. Evidence-based policy (EBP) is public policy informed by rigorously established objective evidence (Head 2010). While it is not the only process for developing policy, it is a process that demonstrates evidence from a qualitative study can be collected in a manner that has discipline and where the outcomes can be measured.

While an evidence-based policy approach is traditionally an approach based on quantitative methods and statistical techniques and analyses, the validity of qualitative evidence is an issue that has been widely debated in the EBP community in recent years (Smith 1996). The World Health Organisation (WHO) has developed guidelines using the evidence-based approach that rely on qualitative data gathered through search strategies including from existing

research and input from multidisciplinary experts and a peer review process (WHO 2011). In the UK, the Cabinet Office maintains that evidence for the purposes of informing policy includes the management of academic research and professional and/or institutional experience (Parsons 2002).

There are three enabling factors that underpin modern conceptualisations of EBP: high-quality information based on relevant topic areas; cohorts of professionals with skills in data analysis and policy evaluation; and political incentives for utilising evidence-based analysis and advice in government decision-making processes. Western countries have developed a strong institutional foundation for nurturing EBP capacities. Their commitment to good data and sound analysis has been reinforced by their involvement in international organisations such as the OECD and their endorsement of international agreements that require sophisticated reporting.

However, while EBP capacity has increased, public policy in the Western countries is often incremental, based on guesswork and assumptions rather than as a process in which the social or policy sciences have an influential part to play (Parsons 2002, Hayes 2007). In 1997 in the UK, the newly elected Labour government sought to address that situation and in its White Paper *Modernising Government* declared its intention to introduce evidence-informed processes in order to provide better-informed development and delivery of government policy (UK Government 1999).

A strategy adopted to ensure the requirements of the UK Government's White Paper would not stall for lack of appropriate capabilities within the public service, provided for opening the process to people from outside the government. This

allowed for access to skills, experience and domain knowledge developed outside the government that could be used to improve the quality of policy discourse within government departments (Levitt and Solesbury 2005). Interestingly, it is reported that while this was promoted in the White Paper as a benefit, as it is not currently being monitored or evaluated it is hard to be sure of the exact benefits and costs, one is left to wonder also whether in fact it is being effectively implemented.

In EM, theorists to date have been more concerned with developing the conceptual and policy implications of their framework, and less with evidence based analysis.

4.5.1.3 Monitoring and evaluation

One of the key considerations when operationalising EM is the monitoring and evaluation phase of policy development and implementation is essential for assessing the need for policies and whether they achieve their stated goals.

The evaluative criteria developed by Guyatt *et al.* (2008) rates the quality of the evidence on scales of between high quality, moderate, low and very low quality. WHO's (2011) policy indicator and guideline development process commences with the formation a Guidelines Review Committee to undertake a scoping (including a review of existing guidelines and selection of the critical outcomes and draft key questions); then the formation and consultation with an expert panel; implementation of a step-by-step methodology; meeting of the global panel of experts; final guidelines report; clearance by Guidelines Review Committee; and publication and dissemination.

The Kyoto Protocol (UNFCCC 1997) has delivered a globally accepted monitoring, evaluation and reporting regime, which is a significant achievement and an important requirement in effective public policy.

4.5.1.4 International influence over policy choices

The agreements from the Rio + 20 Conference (UNCSD 2012) and the UNFCCC COPs (UNFCCC 1997) are major influences on the decisions of the state and the policy choices for climate change mitigation strategies. The agreements have as their objectives sustainable development, which they describe as the delivery of environmental protection, economic growth and social wellbeing (UNCSD 2012; UNFCCC 2011). The Bali Action Plan (UNFCCC 2007a) introduced the requirement that the economic and social consequences of adaptation to climate change be considered in the negotiations. The Rio + 20 outcomes document *The future we want* (UNCSD 2012) also contains these provisions as well as others addressing directly the issues of poverty eradication, the engagement of civil society, green economy and institutional arrangements. While comprehensive and well intentioned, these requirements may have created a barrier to the effective implementation of the agreements. Indicators that this could be true are the growing concerns among observers and interest groups that the climate agreements may not deliver on their target of containing the average increase in global temperature to less than 2 degrees, that civil society is becoming disenfranchised, that negotiators will not address the ambition gap to avoid consequential responsibilities for additional finance and that there may be claims for compensation from developing countries and disputes over intellectual

property rights (for example, Climate Action Network (2012), Fisher (2010), Eastwood (2011)).

The negotiation of the international environmental agreements is a complex and lengthy process that reflects the commitment of the states involved to the environment; a commitment that it is expected will guide their approach to domestic policy development. Public policy enacted to address climate change impacts communities as they adapt to the economic and social changes necessary to reduce their GHG emissions to the levels of international commitments. Each nation-state has political sensitivities that influence policy choices. This may also be a constraining factor over implementation of a "purer" version of EM.

The UNFCCC's Kyoto Protocol (UNFCCC 1997) required ratifying nations to commit to specific targets and timeframes concerning emission reductions, and many member states, particularly in developed economies, have framed domestic policies with these targets as outcomes. In terms of the EM model discussed here, these are the policy options from the pathway that delivers Outcome 3, policies intended to deliver a specified outcome or target and are biased against the more process-oriented Outcome 2 and the stricter environmental orientation of Outcome 1. The implication for EM theory is that while the international agreements remain a primary influence over the policy of the state, the pathways to operationalising EM, i.e. the policy options and the options for Outcome selection, are narrowed considerably.

The following section presents a template for action that gives effect to the processes that have been discussed here.

4.6 Operationalising EM: The process

This section presents a template for action that gives effect to the processes that have been discussed here. The compiled wisdom from the scholars surveyed and the practical considerations of the agencies that inform governments such as the OECD and GGKP, identify the interventions and their sequence that will deliver the selected outcome:

1. Orientation to an EM theoretical framework:
    a. Adopt as a policy objective for harmonisation of the economy with the environment
    b. Adopt standardised definitions of EM and its components to strengthen governance, to develop the capacity and resources for the sound application of the policy, and to enforce the process of policy application including achievement of outcomes.
2. Outcome selection:
    a. Determine the outcome required - is it a strong science based focus addressing environmental concerns, a process-oriented model that can achieve harmonisation of the economy and the environment, or the achievement of a specified outcome such as a GHG emission reduction target?
3. Pathway identification:
    a. Identify the pathway by applying EM to establish the interventions that will deliver the desired outcome

b. Preference should be given to policies that are evidence based rather than on an incremental basis

4. Applying the interventions:
    a. Establish EM oriented leadership, a vision and a plan
    b. Reform and/or design policies to be implemented
    c. Implementation strategies developed and applied
    d. Monitor and evaluate and adjust

4.7 The relevance of EMT in 2014

The theory of ecological modernisation emerged in the 1980s; a time when the focus of global concerns were increasingly about the environment (UNCED 1992). The theory continues to evolve and ongoing research is required (Mol *et al.* 2009). A chronology of the milestones in the global commitments to the environment and sustainability, and the parallel establishment of EM as an environmental policy theory, is shown in Table 4-5. The chronology charts the international response to concerns about the environment, from the first UN Conference on the environment in 1972 in Stockholm through to the discussions today where the concerns are expressed in the context of sustainable development and the UN member states have committed to programmes that address the environment, poverty, social wellbeing, economic growth and cost sharing. In sum, the states have agreed that environmental problems are very real, that they must be addressed and the timeline is finite. However, there is also a range of what are regarded as equally demanding development inequity concerns across the global population that must be addressed and it is important that the paradigm shifts required to protect the environment do not perpetuate poverty and exclusion.

While EM and the world's leaders had similar views in the early '90s, the world's leaders have now redefined their desired environmental outcomes, adding a stronger social dimension to the existing environmental and economic elements (UNCSD 2012, UNFCCC 2010). Whether this is implicit in EM or whether it is a relevant consideration in EM is an important subject for further research. EM does, however, still provide a reminder of the problem that brought the leaders together originally: that resources are being consumed at a rate that is not sustainable and that waste must be reduced, priorities that remain pre-eminent in the present sustainability debate and the international agreements that have been established.

One key issue for EM researchers is how EM is impacted by the redefined outcome sought by the world leaders. The Heads of State and Government came together at UNCED in 1992 to develop solutions to their concerns about the environment. They met again in 2012 at Rio to develop solutions to their concerns about the environment that did not perpetuate the inequities that lead to poverty and exclusion. This research does not inform that debate, beyond advocating the need for it to take place in the context of EM. That said, there is also growing concern that the climate targets that derive from the international agreements may not be met and that the climate agreements from Cancun, Durban, Doha, Warsaw and Rio + 20 are encumbered by the obligations, benefiting neither objective. The next two UNFCCC COPs in 2014 and 2015 may be defining events that will see the states either bridge the ambition gap and do what is necessary to contain the increase in average global temperature to less than 2 degrees or redirect their attention and resources to state-only action. Regardless of which path is chosen, further

examination of EM as a theoretical framework for guiding policy becomes even more important.

Table 4-5: A chronology of the emergence of ecological modernisation and the UN agreement on climate and the environment

Date	Event
1972	The UN Conference on the Human Environment in Stockholm was attended by 113 UN member nations and presented the first taking stock of the global human impact on the environment. At Article 6 of the Declaration from the Conference (the Stockholm Declaration) the UN member states declared that "a point has been reached in history when we must shape our actions throughout the world with a more prudent care for their environmental consequences" (UNCHE 1972, Art. 6). The Declaration was drafted as a set of principles "to inspire and guide the peoples of the world in the preservation and enhancement of the human environment" (UNCHE 1972 preamble).
Early 1980s	Ecological modernisation followed in the wake of the Stockholm Declaration. It had its origins in the early 1980s with what the sociologist Fred Buttel labelled the sociology of environmental reform (Mol *et al*. 2009). The German sociologist Joseph Huber (1991) described EM as industrial restructuring with a green twist while Simonis described it as advocating the resolution of environmental problems through harmonising ecology and economy (Spaargaren and Mol, 1992).
1992 (20 years after original declaration)	The Declaration from the 1992 United Nations Conference on Environment and Development (UNCED 1992) in Rio reaffirmed the commitment made 20 years earlier, but moved to more inclusive language, speaking more broadly of sustainable development and that "environmental protection shall constitute an integral part of the development process" (Principle 4), similar language to Simonis' goal for EM of harmonising ecology and economy. The Conference also developed three Conventions, addressing concerns about desitification, biodiversity and climate change. It also introduced the concept of common but differentiated responsibilities, the responsibility to take action to the level of the country's economic and social capability. The international community then advanced the discourse considerably, integrating environmental considerations into economic and social policy. The EU in 1997 added protection of the environment to the objectives of economic growth and full employment, providing that "[the Community] shall work for the sustainable development of Europe based on balanced economic growth and price stability, a highly competitive social

	market economy, aiming at full employment and social progress, and a high level of protection and improvement of the quality of the environment" (European Community 1999, Art. 3). The 2002 World Summit on Sustainable Development in Johannesburg reaffirmed the commitment to the Rio Declaration, and the internationally agreed development goals, including the UN Millennium Development Goals (MDGs) (WSSD 2002). These were significant developments as concerns about the environment had become concerns about sustainability, and strategies to address those concerns now extended to the social and equity concerns. The concept of common but differentiated responsibilities was now a basic tenet of these agreements.
2007	The UNFCCC further extended to scope of the commitments it sought from member states, recommending the agreements include provision to address the social impact of climate change (UNFCCC 2007). The themes for the 2012 Rio Conference on Sustainable Development were a green economy in the context of sustainable development and poverty eradication; and the institutional framework for sustainable development. The scope of the agreements extends to intellectual property rights, to issues of poverty and human rights, of the rights of workers to decent work and a just transition, and the right to social protection (UNFCCC 2011; UNCSD 2012).

4.8 Conclusion

This chapter provides a rationale for the selection of EM as the theoretical framework for this research, its validity as a theoretical model for framing policy on climate change and its relationship with the practice were also discussed. Although EM is still evolving, it is argued that it is the most suitable theoretical framework to explore the research questions and proposition outlined in Chapter 1. However, within the diverse field of EM theory there are a range of interpretations that can work to blur its usefulness and in some ways the theory is not in a sufficiently mature state to allow analysis of the range of issues that arise during the operational phase.

This discussion concludes that there are not one but three possible outcomes from the application of the EM principles once the desired outcome has been selected,

the appropriate pathway can then be identified by using EM and hence the interventions necessary to achieve that outcome. In doing so, however, it is necessary to address the uncertainties in EM that Christoff (1996) observed were the result of "competing definitions [of EM that] blur its usefulness as a concept" (p. 101). The discussion concludes that in order to effectively apply the process, it is necessary to standardise the definitions of EM and its components, a measure that would develop capacity and resources for sound application of the policy and to enforce the process of policy application and achievement of outcomes.

The success of the operationalisation of EM is dependent on policy choices, which are significantly influenced by international agreements and the distinctive domestic political, institutional and cultural features of a region as well as the national economic importance of sectors of industry and the extent of the environmental impact on those industries. It was also observed that relationships between stakeholders that are open, democratic and engaging of social movements in the stronger versions of EM are important. Chapters 5 and 6 use EM to examine two units of the case study: the European Union and the United Kingdom, exploring the role of employers' organisations and trade unions in the development of climate change policy.

In sum, this chapter developed the process to operationalise EM and involves the following stages:

1. Assumptions:

- EM theory embodies general and/or abstract principles concerning the relationship between the economy and the environment

- EM can be described as the relationship between the market and innovation and the interventions of the state, civil society and ecological consciousness to decision making in the pursuit of harmonisation of the environment and the economy
- There are not one but three possible outcomes from the application of EM principles: a strong science focus addressing environmental concerns; a process-oriented model to realise harmonisation of the economy and the environment; and the achievement of a specified outcome such as a GHG emission reduction target
- From the selected outcome, the appropriate pathway can be identified and hence the interventions necessary to achieve that outcome

2. The process to operationalise the theory:

- Orientation to the EM theoretical framework:

    a. Adopt as the policy objective harmonisation of the economy with the environment

    b. Adopt standardised definitions of EM and its components to strengthen governance, to develop the capacity and resources for the sound application of the policy, and to enforce the process of policy application including achievement of outcomes.

- Outcome selection:

a. Determine the outcome required - is it a strong science focus addressing environmental concerns, a process-oriented model that can achieve

harmonisation of the economy and the environment, or the achievement of a specified outcome such as a GHG emission reduction target?

- Pathway identification:

a. Identify the pathway by applying EM to establish the interventions that will deliver the desired outcome
b. Preference should be given to policies that are evidence based rather than on a policy or instinct basis

- Applying the interventions:

a. Establish leadership, a vision and a plan
b. Reform and/or design policies to be implemented
c. Implementation strategies developed and applied
d. Monitor and evaluate

5 Embedded case study unit 1: United Kingdom (UK)

5.1 Introduction

5.1.1 Overview

The previous chapter, Chapter 4, discussed the development of ecological modernisation from a theory to its potential application as a practical model. This chapter examines one of the embedded, or bounded units of analysis[10] of this single case study of climate change policy and the impacts on employment and the workplace: the peak employers' organisations and trade unions in the United Kingdom (UK).

As discussed in Chapter 2, this research is a qualitative study involving a review of international policy and a single case study. This major study is supported by studies of two industry sectors and two situation-specific studies undertaken as part of the research project that have been published in peer-reviewed journals. The embedded units in the industry studies include the statutory jurisdictions of the UK and the European Union (EU). The organisations and institutions studied in this and the next chapter respectively are:

- United Kingdom; Confederation of British Industry (CBI); Trade Union Congress (TUC)

[10] The concept of embedded or bounded units of analysis is explained in S2.3 and refers to the units within the case that are to be subject to in depth analysis (Gerring 2006)

- European Union and the related institutions; BusinessEurope; European Trade Union Confederation (ETUC)

The European context was chosen to inform the research because Europe and its member states present a rich source of policy and experience on climate change. Europe has been at the leading edge of developments in climate change and the EU and member states have been taking action since the early 1990s to achieve reductions in GHG emissions. They have also worked actively for global agreement on climate change.

The UK was chosen as a unit in the study because it is a mature industrialised economy with a tradition of intervention by the state in environmental management and, through the 2050 Pathway Package (DECC 2010), has set in place a program supported by legislation and finance to ensure progress toward this future commitment.

With respect to public policy on climate change and the effectiveness of regulation and programs, the review in this chapter found that the EU statutory requirements are pervasive influences on the UK domestic policy, particularly in regard to climate change. The UK has met its short-term commitments under international agreements and domestic targets and has set a path for ongoing emissions reductions through to 2050. While this is an impressive demonstration of commitment and practice, some observers such as the UK Government's Committee on Climate Change (DECC 2011f) believe the programs must be increased in scale if the future targets are to be met.

5.1.2 The UK's ecological objectives

The evolution of the UK's ecological objectives associated with climate change and energy security is evidenced in policy documents since the 1997 Marshal Report (Dresner *et al.* 2006) which discussed the social responses to environmental tax reform in the UK.

The UK Government's present commitment to greenhouse gas emission reduction and its approach to the issue of climate change is reflected in a number of formal instruments across international, regional and domestic statutory jurisdictions (Table 5-1). The UK has made significant progress toward these commitments and the emissions reduction required under the Kyoto Protocol have been achieved (Syndex 2011). However, the Committee on Climate Change (CCC), established under the UK Climate Change Act 2008, has warned that the longer term commitments to reduced emission by 80 percent below 1990 levels by 2050 may not be achieved without further intervention by the government because the current programs are failing to achieve the necessary step changes (DECC 2011f).

Table 5-1: UK formal commitments to greenhouse gas emission reduction

Commitment type	Commitment
Domestic commitments	• 2050 Pathway Analysis (DECC 2010) • Climate Change Act 2008: Emissions reduced by 80% below 1990 levels by 2050 (Carbon) budgetary period including the year 2020 • Carbon Plan (DECC 2011a) • Climate Change Act 2008 • Energy Act 2008
International commitments	• UNFCCC Agreements from the COPs

	• Kyoto Protocol: Emissions to be reduced by 5% below 1990 levels to be achieved during 2008-12 (UNFCCC 1997)
Commitments to the European Parliament	• European Union (EU) Climate and Energy Package: 20% reduction in greenhouse gas emissions, 20% of energy from renewable sources and 20% reduction in primary energy usage, by 2020 (Europa 2010a) • Greenhouse Gas Effort Sharing Decision: Emissions reduced in the sectors of the domestic economy not covered by the EU Emissions Trading System (ETS) which in the UK is a reduction in non ETS sectors equivalent to 16% below 2005 levels (DECC 2011c)

5.1.3 Theoretical framework

The theoretical framework for this research, ecological modernisation, has established its credentials in the environmental policy field, and has strong relevance to environmental policy, planning and management systems in many industrialised countries (Cohen 1997, Howes *et al.* 2010). Figure 5.1 provides a comparison of the policy and process of the UK Government within an EM framework against the theory, the research contention and the EU. It demonstrates that the policy and process in place in the UK is only partially consistent with the EM framework. If it is accepted that the EM framework has strong relevance to environmental policy in industrialised countries, it is not possible to reasonably predict that the present UK policy and process will deliver on its objectives.

Figure 5-1: Ecological modernisation, the research contention, and the EU and UK units of the study

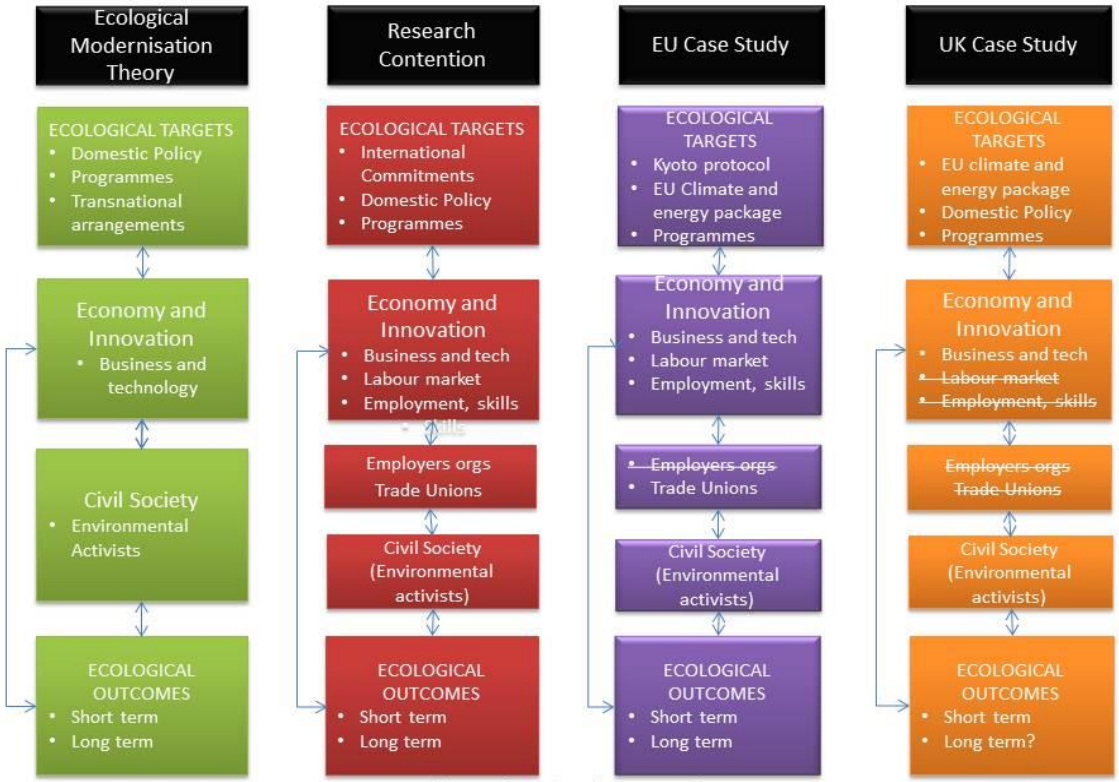


Table 2 Ecological modernisation, the research contention and the UK study

5.2 Public policy

5.2.1 Policy framework

The UK has experienced some significant environmental disasters that are the result of human activity and required intervention by the state. Examples include the 1862 Royal Commission on River Pollution, which was initiated in response to the typhoid and cholera epidemics of the 1840s (Radford University 2012); the 1956 Clean Air Act was a response to the "London Smog Disaster" (University of Edinburgh 2012) and the 1972 Royal Commission on Environmental Pollution

was established to address the environmental problems and pollution caused by road traffic (Dresner *et al.* 2006).

A more structured approach to management by the state in the UK of the environment and climate change began when climate change emerged as a dedicated priority issue at the 1992 Rio Earth Summit, and the 1997 UNFCCC COP adopted the Kyoto Protocol which saw most governments formally commit to reducing greenhouse gas emissions. The UK Government agreed to become an Annex 1 Party to the Protocol, a commitment ratified by the UK Parliament in 2002 (UNFCCC 1997; UK POST 2002).

In 2001, the UK Government legislated to impose a levy on industrial and commercial activity as a means of reducing greenhouse gas emissions and in 2002 introduced the emission trading system ETS (Dresner *et al.* 2006). In 2008, the Climate Change Act was passed into law setting a target for the reduction of GHG emissions of 80 percent below the 1990 base year by 2050 (DECC 2011b).

A chronology of the major developments concerning the UK's climate change policy is outlined in Table 5-2.

Table 5-2: Chronology of the major developments regarding climate change in the UK until 2011

Date	Act
1988	Contribution by UK scientists to Intergovernmental Panel on Climate Change (IPCC) first report (IPCC 2007)
1992	Rio Earth Summit
1997	Kyoto Protocol adopted
1998	Marshall Report proposed a climate change levy (CCL) as an economic instrument to reduce the industrial and commercial sectors greenhouse gas (GHG) emissions (Dresner *et al.* 2006)

2000	UK Pension Act amended to require trustees to declare social, environment and ethical considerations in investment evaluations (Dresner *et al.* 2006)
	Carbon Disclosure Project: fund managers sought information from the 500 largest companies in the world on their GHG emissions (Pfeiffer and Sullivan 2008)
2001	Climate Change Levy (CCL) introduced
2002	UK Emissions Trading System (voluntary) commences
	Renewables Obligation: UK electricity suppliers were required to source an increasing proportion of electricity they supply to customers from renewable sources ((Dresner *et al.* 2006)
2003	UK Energy White Paper: prescribed a long term strategic vision for energy policy combining environment, security of supply, competitiveness and social goals (Dresner *et al.* 2006)
	European Parliament adopts the EU Emission Allowance Trading Directive (Dresner *et al.* 2006)
	World Wildlife Fund releases its Powerswitch Financial Report (WWF 2003)
2005	EU ETS commences
	Friends of the Earth launch the "Big Ask" campaign (FoE 2008)
2007	European Council approves the EU 20:20:20 by 2020 Climate and Energy Package (Europa 2010a)
	Climate Change Bill introduced to Parliament
2008	Climate Change Act passed into law
	UK Nuclear White Paper: new nuclear power stations should have a role to play in the UK future energy mix, alongside other low carbon sources (DECC 2007)
	UK Energy Act 2008 passed into law
	EU Energy Performance in Buildings Directive prescribed the methodology and standards for calculating and integrating energy performance in buildings (BPIE 2011)
2010	UK Energy Act amended to cover Carbon Capture and Storage (CCS) demonstration projects, incentives and fairness of energy markets
2011	UK Energy Act amended to introduce the Green Deal

Much of the domestic climate policy of EU member states is framed by requirements of the EU's Climate and Energy Package and related regulations intended to combat climate change and increase the EU's energy security (Europa 2010a). At the 2005 Hampton Court Summit, EU member states gave the

European Commission a mandate to develop a common energy policy (Europa 2010a). In March 2007, the European Council "approved the ambitious climate change and energy package to build a low carbon economy in Europe" (DECC 2007, p 34). The targets, to be met by 2020, are a reduction of EU greenhouse gas emissions of at least 20 percent below 1990 levels; 20 percent of EU energy consumption to come from renewable resources; and a 20 percent reduction in primary energy use compared with projected levels, to be achieved by improving energy efficiency (Europa 2010a). The package became European law in 2009 and the targets became legally binding on member states. The EU's Lisbon Strategy for Jobs and Growth (BIS 2008) provided the bridge between the EU Climate and Energy Package and its policy for labour market and skills. The Strategy set the aim of achieving "sustainable economic growth with more and better jobs and greater social cohesion" (p 31), objectives the UK Government endorsed but which have not been implemented uniformly by relevant UK Government departments.

In its *Green Growth Strategy Synthesis Report*, the OECD (2011) provides an explanation of why labour market planning is an important component of the strategy to transition to a low carbon economy and workplace. The report discusses the employment and distributional on the labour market of the impacts of climate change policy, noting that some jobs will be at risk and others will have to be reallocated, a churn that will create challenges for some and opportunities for others. It contends that labour and skills policies are important and that labour policies should focus on preserving employment, not jobs. The policies need to ensure that workers and companies are able to adapt quickly to changes brought about by the greening of the economy, including by seizing new opportunities. It

speaks of the need to reinforce social protection systems for those that are negatively affected.

The UK 2050 Pathway Analysis (DECC 2010), the Carbon Plan (DECC 2011a), the Climate Change Act 2008 and the Energy Act 2008 represent the UK's vision and plans for reducing emissions, climate management and energy efficiency. The long-term perspective offers some certainty for decision-makers against the potential short-termism in policy and facilitate regulatory coherence. The OECD's (2010) report *Policies for a Sustainable Recovery* and the *Climate Policy Tracker* (WWF 2011b) generally agree that UK policies and programs are appropriate to ensure its commitments under the EU Climate and Energy Package can be met. These assessments are not unqualified but any criticism is related to potential weaknesses in implementation rather than flaws with UK policies and programs. These initiatives are considerate of the need for industry to remain competitive and to innovate. However they do not explicitly integrate industry policy, the social dimension of climate change, and the impact on the labour market, employment and skills requirements. Nor do they reference the principles of engagement with civil society and social dialogue that are so much a part of EU practice - concepts that have been further analysed as part of this research and are discussed in Section 5.3.3.

5.2.2 The 2050 Pathway Analysis

The UK 2050 Pathway Analysis (DECC 2010) is rooted in scientific and engineering realities, looking at what is thought to be physically and technically possible (DECC 2012a). It is system wide, covering all parts of the economy and all greenhouse gas emissions released in the UK. The framework for action that

responds to the Analysis seeks to balance the UK's ongoing dependence on fossil fuels for energy and the targeted reductions in greenhouse gas emissions. It addresses the requirements for: ambitious per capita reductions in energy demand; substantial increase in the electrification of heating, transport and industry; increased supplies of electricity; sustainable bio-energy; development in CCS technology; and managing emissions from agriculture, waste and transport (DECC 2012a). The Analysis is recognition that the successful shift to a low carbon economy requires a clear direction and early action by the UK Government to provide the confidence consumers and investors require for investment in infrastructure and plans that often has long payback periods.

5.2.3 The Carbon Plan

The Carbon Plan (DECC 2011a) is the second pillar of the UK Government's climate change commitments. It is effectively a work plan that sets out how the UK will make the shift to a low carbon economy "while maintaining energy security, and minimising costs to consumers" (DECC 2011a, p. 1). It was presented to Parliament on 1 December 2011 and lays out a detailed program of action with the timelines necessary to meet its objectives within the four budget cycles of the Plan. The sectoral plans cover buildings, transport, industry, electricity, agriculture, land use, forestry and waste and are required to address:

- Secure, sustainable, low carbon energy
- Saving energy in homes and communities
- Reducing emissions from business and industry
- Moving towards low carbon transport
- Cutting emissions from waste

- Managing land sustainability
- Reducing emissions in the public sector
- Developing leadership within the European Union
- Building the case for global ambition with key countries and international institutions
- Supporting the development of low carbon, climate resilient economies
- Ensuring progress within international climate negotiations
- Action in Northern Ireland, Scotland and Wales (DECC 2011a, Part 2

The Plan acknowledges the uncertainties of planning for emissions reduction such as how far demand can be reduced, the availability of biomass, how far electrification can be taken and which of carbon capture and storage (CCS) or nuclear will be the most cost-effective option (DECC 2011a, Part 3).

The UK Government's modelling finds that the country is in a strong position to deliver on its carbon budgets out to 2020 (DECC 2011a), noting that achievement of the fourth and final budget will depend on a range of variables such as economic growth and the related demand for energy, the EU ETS cap, the ability to scale up the current strategies and the development of technology options such as CCS. Despite the optimism the Plan's scenario modelling has generated, assessments by others including the government's Committee on Climate Change are less positive, finding that these measures are "not likely to be sufficient to deliver on the fourth carbon budget" (DECC 2011e).

5.2.4 The Climate Change Act 2008

The Climate Change Act 2008 converts into law the ambition of the 2050 Pathway Analysis and the programs of the Carbon Plan. The Act provides for the system of carbon budgeting, establishes a Committee on Climate Change and confers powers to establish trading schemes for the purpose of managing emissions. The Act ensures data collection is timely and reported regularly to provide information from which both the public and private sectors can make informed decisions.

The Act requires the Committee on Climate Change to report annually to the government with regard to adaptation as well as mitigation, and for this purpose the Committee "established the Adaptation Sub Committee ... to provide independent and expert advice on how to assess climate risks and to report regularly on the UK's progress in preparing for the future climate" (DECC 2011b, p. 8). Its second report of July 2011 found that while the UK is coping with climate change, generally climate risks appear not to be fully incorporated into some major strategic decisions such as land use planning and investment in water infrastructure (DECC 2011g). Interestingly, it also found limited evidence of action by householders to reduce their vulnerability to unaffordable energy costs, which they see as indicating the need for new policy measures (DECC 2011g, p. 88).

5.2.5 The Energy Act 2008

The Energy Act 2008 implements the legislative aspects of the Energy White Paper 2007 and the EU Climate and Energy Package (Europa 2010a). The 2010 and 2011 amendments provide for the Green Deal (DECC 2012c) initiative and the step changes required for the energy-efficiency measures to homes and businesses.

They also make improvements to the regulatory framework for low carbon energy initiatives and fair competition in energy markets (DECC 2011d).

The UK Government's scenario analyses (DECC 2007) predict that the UK will have an ongoing dependence on fossil fuels for energy. Accordingly, nuclear power and CCS technology are seen to be necessary elements of an energy policy as they assist with emissions management (DECC 2010). They also indicate the UK Government and society are less philosophically opposed than other nations to nuclear power. CCS is still in the research and development phase and its viability is not yet established (DECC 2012a). As of 2013 there are no fully commercial-scale CCS power projects, although the UK has the ambition of assuming leadership in the technology (DECC 2012a). The government proposed the construction of four demonstration plants in the period 2010 to 2020 that have the potential to create 8,000 jobs immediately and with an estimated employment potential of 30,000 jobs. However, government preparation has not taken into account the labour market requirements and is now finding that sourcing appropriately skilled staff may be a barrier to completion of the projects (ETUC 2010).

5.2.6 Energy efficiency and the Green Deal

The EU Climate and Energy Package (Europa 2010a) and the UK Energy Act (2008) mandate energy efficiency as a core element of the initiatives to build a low carbon economy. As domestic buildings are responsible for 25 percent of the emissions in the UK and just over 40 percent of its final energy use (WEF 2011), buildings are a logical initial focus. In the UK, the Green Deal (DECC 2012c) and smart meters (DECC 2012b) are the flagship initiatives designed to improve the

energy efficiency of UK building stock. The government intends that all new homes will be zero carbon from 2016 and non-domestic buildings from 2019 (DECC 2011a).

Smart meters will be mandatory in the 30 million homes and small businesses in the UK from 2019, and the information they provide should enable consumers to better understand their energy use and maximise the opportunities for saving energy (DECC 2011a). The government will include energy-efficiency advice as part of the installation visit and will provide support through a centralised communications activity to help all consumers understand how to use the meters and obtain the benefits. The roll-out is to begin by 2014 (DECC 2012b).

The Green Deal will provide the opportunity for households and businesses to improve their energy efficiency at no upfront cost, paying back through future savings in energy bills. The legislation also provides the Energy Company Obligation (DECC 2012d) which allows supplier subsidy and integration with the Green Deal Finance.

The DECC proposes to invest £3 million to train Green Deal Assessors and to address skill shortages (DECC 2012c). Estimates suggest as many as 65,000 jobs could be created by the Green Deal, with up to 54,000 of these being for installers (DECC 2012c). Gleeson *et al.* 2011 contend that there is need for "a substantial increase in the capacity of the construction industry to carry out this work and training programs to produce the necessary skills" (p. 3) to meet the demand for skilled workers. For the longer term, the DECC is working closely with Sector Skill Councils, employers and the Department of Business, Industry and Skills (BIS) to

develop new apprentice schemes to support the demand likely to be generated by the Green Deal (DECC 2012d).

While the Green Deal is a well-resourced program, research within the UK and across Europe (Gleeson *et al.* 2011; CEDEFOP 2010) points to the additional demands on the labour market that should also be a factor in its preparation. To not do so, leaves open the risk that labour may not be available to do the work in the numbers and with the skills required.

5.3 Stakeholders: Industry, trade unions and civil society

The EU formed the European Economic and Social Committee (EESC) in order to allow "economic and social interest groups" to express their views at a European level and to strengthen the "democratic legitimacy and effectiveness of the European Union by enabling civil society organisations from the Member States" (Hache 2011, p. 8). It subsequently refined the process by formally identifying sectors within civil society and recognising peak representative organisations including recognised employers' organisations and trade unions. The UK, unlike other countries across Europe and the European Union does not afford statutory recognition to the representative organisations of business and workers. In the UK, the peak representative organisations for employers and workers are the Confederation of British Industry (CBI) and the Trade Union Congress (TUC).

5.3.1 Business/employers' organisations

UK industry representation has been largely sectoral, whereby associations of business with similar interests have formed to undertake the representative and collective role on all matters related to their sphere of interest. For most activities

the associations do not collaborate and advocate collectively. As observed by Bailey and Rupp (2006) "lobbying has historically been their [UK associations'] main activity but, due to a profusion of associations – often in competition with each other – and lack of a strong peak organisation, they have frequently been by-passed by the British governments" (p. 44). They note that historically the CBI has often acted as a competitor to sector associations rather than as a peak organisation. However, with the introduction of the Climate Change Agreements (CCAs), informal partnerships emerged between the CBI and the trade associations to press their case.

The CBI is the largest national business representative association in the UK. It is the UK affiliate on the European representative organisations of business and employers, BusinessEurope, and for other international agencies such as the ILO and the OECD. In the UK and internationally, the CBI assumes the mantle of a peak organisation, although it has neither the constitutional authority nor the charter to represent industry in its entirety. This has the effect of mitigating the impact of its advocacy it can also be conflicted between the broader interests of industry in the UK and the interests of its corporate members.

The CBI has expressed its support for the ambitious targets of the UK Government and contends that business is tackling the low-carbon challenge (Cridland 2011). It says that business recognises that unabated climate change could pose an unacceptable risk to the stability of ecosystems and the economy and that "the businesses which will succeed in the twenty first century will be those that seize the opportunity to adapt to a low-carbon future" (CBI 2009, p. 4). The CBI identifies the role of business in the shift to a low carbon economy as: to find and

implement solutions, to provide consumers with information to make informed choices, to develop and deploy low carbon technologies, and to be an investor and innovator to ensure the UK can exploit its opportunities (CBI 2012).

In 2007, the CBI moved to the climate change "moral high ground" when it formed its Climate Change Board and published its climate manifesto in the report *Climate Change: Everyone's Business*, written by the seventeen business leaders who were the members of the Board (CBI 2007). This was a declaration of the CBI commitment to climate change mitigation action and its belief that there was advantage in the UK being a leader. The report has, in the absence of a formally stated policy, become the CBI's manifesto on climate change. The key messages from the report (outlined in Table 5-5) have been the consistent themes in subsequent CBI advocacy, to which should be added the need for agreement by other countries to the measures and commitment to tackle climate change. The report arguably was an influential reference in the public policy debate and has been the platform for advocacy by the CBI ever since (Eurofound 2011a).

Table 5-3: Key messages from *Climate Change: Everyone's Business*

- The government's targets for 2050 will stretch resources but are achievable and at a manageable cost – provided early action is taken
- In the run up to 2020, the emphasis must be on much higher energy efficiency together with preparations for a major shift to low carbon energy sources
- The UK has a unique opportunity to prosper in key markets of the future by taking a lead in the development of low carbon technologies and services in power, buildings, transport and industry

- Empowering consumers to make low carbon choices is equally vital
- Market forces will drive big changes, but they will not by themselves be enough to do the job

Source: CBI (2007)

A distillation of the CBI's climate change activities finds their advocacy has focused on public policy and programs, international activities and energy policy (see Appendix 1 for details). The CBI's directives lack penetration into industry and economic policy and the subordinate issues of transport and agriculture, and its advocacy is often about issues that are one-off and ad hoc rather than as part of a considered long-term plan to strategically influence policy.

While the CBI has been prolific in its written contributions to public debate (for example, CBI 2007, CBI 2009, CBI 2011); it has not distilled its views into a clear policy statement. Interestingly, while at one end of the scale it articulates a broad overarching agenda and the role of business in the shift to a low carbon economy (CBI 2011), and at the other end it talks in detail about situation specific issues such as the benefit of displaying energy certificates (CBI 2011) but it does not turn its attention to the process of transitioning. While the CBI demands policy coherence and dialogue across portfolios of government (CBI 2009), there is no evidence that it has prepared advice about what it expects the government to do. The CBI's broader strategy also is unclear. Its various statements often relate to individual situations or specific programs, critiques of proposals by the government that are the subject of the day, for example, the *Heat Is On* publication which is a response to the UK Government's proposed policy for community heating (Cridland 2012). The CBI's statements can also be contradictory, for

instance with calls for the removal of subsidies paid by other governments within the EU to ensure a level playing field for UK business but it then calls for subsidies to protect disadvantaged sectors within the UK to balance domestic commercial activity (Cridland 2011).

The CBI is not an "employer's organisation" in the terms defined by Blackwell (1999) as a collective organisation of employers. Its constitutional mandate does not extend to representing its members in wage negotiations or making representations about such matters with government or trade unions. The labour market and the impact of climate policy on people and the workplace have not been identified by the CBI as issues that require special consideration. On the occasions labour market issues are mentioned in CBI communications, the issue on which it seeks action is education and training, advocating for a system that provides skills, capabilities and attitude for the workplace (CBI 2011). It does not relate these reforms to the labour market reforms identified by others as necessary for the effective transition to a low carbon workplace (for example, ILO 2012, OECD 2011, Eurofound 2011a)

A thorough search found little evidence that the public policy process took heed of the views and activities of the CBI, or more broadly business and industry associations. As an advocate with the role of exerting influence over public policy on climate change, CBI does not appear to be particularly effective in its use of the media and neither are there indications that government, commentators or researchers look to CBI to inform their enquiries.

5.3.2 Trade unions

The Trade Union Congress (TUC) is a peak UK trade union organisation. All trade unions in the UK are affiliated with the TUC. The UK trade union movement is much more structurally rational than CBI and therefore accountable, with a collegiate structure and membership representation from across the breadth of industry[11]. Policy and decisions made by the TUC are observed and implemented by all member unions under a top-down governance model. A problem confronting the TUC is that trade union membership is declining in the private sector, in 2010 membership within the public sector was 56 percent but in the private sector was only 14 percent (BIS 2012).

The TUC is the principal civil society advocate in the UK within its organisational mandate for labour relations and workplace issues. It is the nature of the UK system that these are matters over which the UK Government has traditionally not been directly involved and they are left to the parties directly involved. The statutory framework governing the labour market, to the extent it exists, is through international labour conventions, EU law and UK common law precedent. Wage agreements, while binding on the parties to the agreement, are negotiated at the workplace or, where the employer and the workers agree, an industry or sectoral agreement.

On climate change, the TUC defers to the policies of the International Trade Union Confederation (ITUC) and European Trade Union Confederation (ETUC). The trade

[11] The TUC says it is "the voice of Britain at work. With 58 affiliated unions representing 6.2 million working people from all walks of life, we campaign for a fair deal at work and for social justice at home and abroad. We negotiate in Europe and at home build links with political parties, business, local communities and wider society" (TUC 2012c, p. 1).

union movement's research finds that the shift to a low carbon economy will be at the expense of some jobs, new jobs will be created and others will morph into new occupational profiles and skill sets (ETUC 2007). Its guiding principles for the shift to a low carbon workplace are that it should deliver decent work and good jobs, and that during the transition the treatment of workers is fair and just (ITUC 2012). The UNFCCC climate agreements now also incorporate this social value. The agreements from the 2010 UNFCCC COP in Copenhagen introduced provision that signatories will, in considering the social dimension of climate change, ensure that workers are provided decent work, good jobs and a just transition. These concepts are discussed in detail in Chapter 3.

The principles that underscore TUC climate change advocacy are: the UK Government must commit to delivery on environmental policy; the state has a central role in stimulating the green economy; the state must encourage research and development; and the state must ensure the workforce has the necessary skills (TUC 2009). A schedule of the TUC's positions on the range of issues that make up climate change policy is in Appendix 2.

The TUC's Green Workplaces project (TUC 2010) opportunistically seeks to favourably reposition the union during the transition to a low carbon workplace and promoting the central role of the trade union (Syndex 2011). The project and related programs are also being used by the TUC to leverage authority in workplace negotiation. The unions Greener Deal Guide is prima facie to provide union workplace representatives an explanation of the climate change issues, but also explains to members how climate change can be used as a vehicle for union renewal, how it can extend the union consultation agenda and how union

involvement in the environmental agenda can bring new members (TUC 2012a). The TUC is also campaigning for the right for trade union workplace environmental representatives to be permitted reasonable time off during working hours to promote sustainable workplace practices, carry out environmental risk assessments and audits, consult with management and undertake training (Eurofound 2011a).

The Green Workplaces project (TUC 2010) is the TUC's flagship climate initiative and is widely applauded across the EU and member states as a best practice model (Eurofound 2011a). The TUC asserts that "half of UK carbon emissions are produced by work activity … they are an obvious place to focus action on climate change as organisations are better placed than individuals to install cost-effective green measures" (TUC 2012a, p. 1) adding:

> Green Workplace projects are workplace-based initiatives that bring together the practical engagement of both workers and management to secure energy savings and reduce the environmental impact of the workplace (TUC 2010, p. 4).

They do this through activities such as awareness-raising events, staff surveys and training workshops. The process is decided by the workplace actors but the objective is to achieve joint management and union environment committees and framework agreements that embed workforce engagement in decisions about the way organisations do their work (TUC 2010).

While Eurofound and the TUC describe Green Workplaces as employer/trade union initiatives (Syndex 2011), the employers involved are usually public sector and institutional employers. This could be a reflection of the unions' diminished

influence in the private sector where union penetration has declined to 14 percent. Private sector management may also be resistant because of the clearly stated objective of ensuring union involvement in management decision-making and their use as negotiating tools on workplace matters.

The TUC currently offers training and support in the climate change workplace projects. Funding for the training has been supported by funding from the Department of Business Innovation and Skills (BIS) Union Modernisation Fund (TUC 2010), which is intended to facilitate transformational change in the organisational efficiency or effectiveness of unions. A consortium of four unions has successfully bid for government to fund its Climate Solidarity project (TUC 2010), which aims to build community/workplace links for greening working and living.

Other major TUC climate change initiatives implemented since 2010 are:

- Unlocking green enterprise: A low-carbon strategy for the UK economy
- Unions and climate change: A guide for union representatives
- Greener deals guide
- Targeting climate change: the TUC's new Unionlearn education workbook for union representatives
- Go green at work: A handbook for green reps
- Talk about saving energy: A TUC briefing on the new CRC Energy Efficiency Scheme
- TUC Unionlearn Trade Unions and the Environment Course
- TUC Green Workplaces Monthly Newsletter (TUC 2012a)

The effectiveness of the TUC in its advocacy on climate change and the environment is not easy to measure as there have been no demonstrable outcomes. It has little engagement with the UK Government's Department of Energy and Climate Change. While its Green Workplaces project is an excellent concept, its take-up is ad hoc and largely amongst organised workplaces and it does not appear to have either spread the word about climate change effectively or spread the influence of the union within the UK. An alternative approach less based on the traditional employer/union adversarial negotiating style that is apparent in the TUC advocacy and programs could potentially open opportunities to extend the Green Workplaces to the private sector.

5.3.3 Civil society

Civil society has been prominent in shaping UK public policy on the environment and climate change. However, it was not until the introduction of the EU ETS in 2005, which was a tool intended by the government to influence the behaviour of market actors, that civil society generally acknowledged the impact of climate change on economic activity.

Voluntary initiatives such as the Carbon Disclosure Project in 2000, a corporate social responsibility initiative of investment fund managers which sought information from companies on their greenhouse gas emissions, were successful in creating awareness but was not successful in driving meaningful change. Corporate social responsibility and socially responsible investing advocated by civil society NGOs were concepts taken up across industry and investors but fell short of achieving the change required to meet the challenge of climate change (Pfeiffer and Sullivan 2008).

A World Wildlife Fund (WWF 2003) initiative targeted energy companies in the UK. The WWF published research that showed how taking action to manage emissions was more cost effective than inaction, demonstrating that it is less costly to set a price on carbon through market mechanisms and to source alternatives to fossil fuels than to do nothing (WWF 2003).

The Friends of the Earth's (FoE) Big Ask campaign is credited with influencing the UK Government's decision to introduce Climate Change legislation and to commit to the target of an 80 percent reduction in emissions (Hall and Taplin 2007). The Big Ask campaign was launched in May 2005 with the drafting of a Climate Change Bill which the FoE then successfully convinced a cross-party group of Members of Parliament to send to Parliament (Hall & Taplin 2007). The then Opposition, headed by David Cameron, added its support to the campaign and called for the Bill to be included in the next Queen's Speech to Parliament. The campaign realised its objective when the Bill passed into law on 28 October 2008 (FoE 2008).

Despite the legislative impact of NGO environmental activism through campaigns like the Big Ask, there is little evidence of a connection with the public and the consumer, who have been neither consulted nor invited to comment on the objective or the intended action by those NGOs or government. Further, members of the public mostly knew little about environmental issues and had little consciousness of energy saving or of the environmental taxes and levies they were paying (Dresner *et al.* 2006; Pfeiffer and Sullivan 2008).

5.4 Discussion

5.4.1 Policy framework

Until the Climate Change Act 2008, the UK's approach to the management of its climate change responsibilities was a blend of hard and soft policy, using tools such as 2001's Climate Change Levy (CCL) and corporate social responsibility initiatives. While business in the UK responded positively, these initiatives had little impact on consumer behaviour (Pfeiffer and Sullivan 2008). It was the Friends of the Earth's (FoE) Big Ask campaign that generated the political will to introduce the Climate Change Act 2008 that defined the extent and the legally binding nature of the government's commitment (Hall and Taplin 2007).

The EU was following a similar path on climate change and in 2005 implemented its emission trading system (ETS). The targets set in the EU Climate and Energy Package (Europa 2010a), the UK Climate Change Act 2008 and the long-term commitment to reduce greenhouse gas emissions by at least 80 percent by 2050 relative to 1990 levels formed the framework for the UK Government's emission reduction and energy-efficiency strategies (DECC 2010).

Under the Kyoto Protocol, the UK committed to reduce emissions to 92 percent of 1990 levels by 2012 (UNFCCC 1997). Although this target was met by 2008, the question under consideration is whether the measures implemented can continue to deliver further emission reductions. To date, the UK has been able to harness its excessively inefficient use of energy across the economy. It also "benefited" from the recession, which it is argued was a contributing factor behind the large reduction in emissions in 2009 (DECC 2011f). This is not to understate the UK

Government's achievements or the very positive work that has been done, but given that the UK has been coming off a low base of widespread inefficient use of energy, the question remains as to whether it can continue the rate of progress.

5.4.2 The employment and workplace issues

An ILO UK country study (Strietska-Ilina *et al.* 2011) finds that there is no centralised national framework for the UK labour market and that, although the government has acknowledged that skills gaps and shortages as a potential threat, "these are through generalized statements rather than specific policy measures" (p. 421). The study concludes that the UK Government's environmental strategies do not generally have a significant skills development component.

The reports by Gleeson *et al.* (2011), the ILO's (2011e) *Skills and Occupational Needs in Green Building* and the OECD's (2011) *Green Growth Strategy Synthesis Report* analyse the issues confronting the construction sector labour market as property owners move to reduce energy consumption and emissions generation. Gleeson's case study of the UK finds that a substantial increase in the capacity of the construction industry labour market will be required to meet the demand created by a national retrofitting program (Gleeson *et al.* 2011). Gleeson also suggests that the nature of the nation's green construction will change, creating new occupational profiles and occupations and requiring new sources of labour to meet the increased demand. These issues change the risk profile of policy and, as discussed in section 5.2.6, particularly the national Green Deal retrofitting initiative.

Employers' organisations and trade unions are the organisations appointed to represent the interests of business and the workforce. Under European regulation, employers' organisations and trade unions are afforded the title of social partners. In most EU member states, the social partners are involved with low carbon economy issues from the stage of policy formulation where they express their positions on policy proposals either through institutional tripartite bodies dealing with sustainable development, or by direct lobbying on draft legislation (European Commission 2011). The EU views social partners as playing an important role in the economy as a whole and the labour market in particular. With respect to climate change it looks to them to create consensus on the implementation of policies across industry and society. This model however, does not flow through to the relationships with the state in the UK where the peak organisations do not have a statutory role and are much less overtly involved with the development of domestic policy including climate change policy.

5.4.3 Business/employers' organisations

The CBI's early work on climate change earned respect across industry and government for its contribution to public debate and guidance to members (Eurofound 2009). However, since 2007 and its early flush of leadership, the CBI has retreated to providing only a passive program that informs members through forums and newsletters and responding to government/public sector initiatives.

Bailey and Rupp (2006) provide a pithy assessment of industry representative organisations in the UK, observing that the potential of the UK's trade and industry associations has rarely been fulfilled. These findings help to explain the dynamics of industry representation in the UK. It is also important to note here that CBI is

not a formal peak organisation. A peak organisation's authority is conferred by the affiliated sectoral and industry associations that are its members, whereas the CBI's authority is conferred by its corporate members. In the absence of a peak organisation, the sectoral and industry associations advocate on their own behalf.

In sum, on climate change the CBI fulfils the role of providing the interface with industry but it is not directly instrumental in the development or implementation of climate change policy in relation to business and industry in the UK.

5.4.4 Trade unions

The union movement internationally has successfully advocated for the inclusion in global climate agreements provisions for a just transition and decent jobs, provisions that most governments have agreed to implement (UNFCCC 2010). In the UK, the TUC advocates the implementation of these commitments and is also rolling out Green Workplaces as its major domestic initiative.

While responsible for a well-defined program of advocacy, there is little to indicate that the TUC has any influence on the development of public policy or programs in the UK. The TUC's policy priorities are not reflected directly in UK public policy. The UK's commitment to the international climate agreements which provide for decent jobs and a just transition with social protection of workers has not yet been passed into law.

The unions penetration, at only 14 percent of the private sector workforce in 2012, mitigates the impact of its advocacy with policymakers and underscores the criteria for selection of programs to which it will commit resources; that is,

programs that create opportunity for it to re-engage with workers and to demonstrate its relevance (BIS 2012).

5.5 Conclusion

This is the first of the embedded units in the case study designed as part of this research to better understand the role of employers' organisations and trade unions in the development of climate change policy conducted through the lens of ecological modernisation. As the first review of a significant section of the data it provides a valuable insight into the possible answers to the research question and the propositions.

Evaluation of the UK's policy and strategies finds they are responsible in relation to the UNFCCC and EU commitments but, as the Committee on Climate Change has warned, further action is required to maintain the rate of delivery against the commitments (DECC 2011g). The Committee reported to Parliament that step changes in the pace of emission reduction are needed and the second and third national carbon budgets should be tightened, a recommendation on which the government declined to take action (DECC 2011f). In another assessment addressing adaptation measures, the Committee observed that some sectors are near the limits of their capacity to adapt further and that climate risks are not being fully incorporated into some major strategic decisions. There is also evidence in the UK of resistance to adoption of the policies amongst the major utilities (DECC 2011g) and residential consumers (DECC 2011f). Investigations have found that the UK's water companies have still not made any specific investment in climate adaptation to tackle potential shortfalls in water supply (DECC 2011g).

An OECD (2010) review found that more could be done to align economic and environmental objectives that would unleash opportunities for green investment. It encouraged the UK Government to progress the integration of programs across portfolios to minimise the potential for conflicting regulation and to undertake labour market planning to ensure the workforce is available in the numbers and with the skills required for the new low carbon economy.

This chapter has established that the UK's employers' organisations and trade unions are well informed and their actions are supported by programs with good research. However, since their early flush of activity, their advocacy on public policy has become a response to proposals of government rather than advocating a strong policy position and they have not sought to retain a public profile on climate change policy. This is the situation in other countries in Europe as well, the research found that in practice, the contribution of the social partners and their commitment is dependent on their work programme which does not always prioritise climate change but rather reflects the current issues of the day (Eurofound 2011d, CEDEFOP 2010, OECD 2013b). Civil society environmental organisations, on the other hand, have been and remain a major influence over public policy.

Analysed in the context of the propositions formed as tests of the research question, the data establishes the impact of climate change policy over the labour market, however the targets from the country's climate change and energy policies have been achieved without the effective interventions of the employers' organisations and trade unions, and without an effective labour market plan. That said, both organisations are active and effective advocates in their respective

European organisations which, the review of the literature for this research finds are an effective influence within the European Commission and over European policy.

In conclusion, while there has been material commitment and action by the UK Government, the work on climate change and climate change policy is far from complete and further significant policy initiatives are necessary to enable the shift to a low carbon economy in the UK. The achievements have been made without a cohesive programme of action by the employers' organisations and trade union and without particular attention by the government to the labour market issues.

6 Embedded case study unit 2: the European Union

6.1 Introduction

The previous chapter examined the first embedded unit of this study: the UK. It looked at the process of public policy development in relation to climate change, the strategies of the peak employers' organisation and trade union to influence that process and their effectiveness. This chapter presents research on the remaining of the two embedded units: the European Union and the peak employer and worker organisations, BusinessEurope and the European Trade Union Confederation (ETUC).

The UK section of this case study found that the EU is a pervasive influence over the policy, programs and reporting requirements of the state. Regarding the major employers' organisations and trade unions, it found they are not a significant influence over climate change policy development. These are findings of major importance and point to the significance of the EU context.

The EU has long been at the forefront of international efforts to combat climate change and was influential in the development of the United Nations' climate treaty: the 1992 UN Framework Convention on Climate Change and its 1997 Kyoto Protocol (European Commission 2011a). In March 2007, EU heads of government agreed to reduce emissions by 20 percent by 2020 and in the months following this decision, the European Commission released a detailed plan on how to meet these targets. The EU had a single-minded focus on climate change and was prepared to embark on this costly program without a similar commitment from

other major contributors to global emissions such as the United States (US), China and India. Schmidt (2008) contends that European policy on climate change is a reflection of the European political culture, noting that most western Europeans have long been concerned about global warming and other environmental problems. This was demonstrated in the 1997 decision of the heads of member states to amend the Treaty establishing the European Community to embed protection of the environment as the Treaty's third pillar alongside economic growth and social protection (Europa 2012b).

6.2 Governing instruments

The constitution of the EU merits comment because of its unique statutory relationship with member states. The Treaty that forms the EU includes provisions for protection of the environment and contains the requirement to consult on matters of social policy with employers, workers and civil society. Both are matters not usually addressed in the rules governing the state. Another feature of the EU model is the statutory framework that sees the coexistence of regional (European) law with domestic law of the member states, a model replicated only in countries that are federations with the right to frame laws at federal and state levels such as the US, Australia and India.

The European Union is an economic and political union of twenty eight member states and is formed by a treaty process. The first treaty was written in 1951 as the European Coal and Steel Community and was followed by the 1957 Treaties of Rome, which established the European Economic Community and the European Atomic Energy Community. The 1993 Treaty of Maastricht formally established the European Union and the concept of European citizenship (Eupolitix 2013).

Since its initiation in 1951, membership has grown from six to twenty eight states at 2007 and the scope of the Treaties has expanded. The 1997 amendment to the Treaty added protection of the environment to the objectives of economic growth and full employment. The amendment provided that the European Community

> "shall work for the sustainable development of Europe based on balanced economic growth and price stability, a highly competitive social market economy, aiming at full employment and social progress, and a high level of protection and improvement of the quality of the environment" (European Community 1999, Art. 3).

The belief that a post-war Europe should provide its citizens economic and social equity is reflected in the provision in the 1957 Treaties of Rome, which required that the representative organisations of business, workers and civil society be consulted in the process of developing European law and practice. The Treaty at Article 300.1 provides that "the European Parliament, the Council and the Commission shall be assisted by an economic and social committee and a committee of the regions, exercising advisory function and … [the committee] shall consist of representatives of organisations of employers, of the employed and of other parties representative of civil society" (European Union 2010, Art. 300.1). To ensure this happens, the European Economic and Social Committee (EESC) was established, through which the European Parliament, Council and the Commission is required to consult is mandatory on matters such as social policy, social and economic cohesion, environment, education, health, and consumer protection.

The Treaties are binding agreements with member states and set out the objectives, rules for the EU institutions and how decisions are made. Under the

Treaties, the EU institutions can adopt legislation on which member states are required to act. The EU cannot propose law that is outside the scope of those Treaties. The laws of the EU function alongside the individual laws of each member nation. When there is conflict between the EU member nations' law and EU law, EU law takes precedence (Eupolitix 2013). The pervasiveness of EU law in the policy and practice of the state was observed in the UK study in Chapter 5.

The EU and member states can also establish Charters. Their legal status may be one of political declaration if the agreement that forms the Charter is not unanimous, and where it is unanimous it forms part of the treaty and has legal status (European Parliament 2001). Charters adopted by the member states include the Community Charter of the Fundamental Social Rights of Workers (1989), European Social Charter (1996), and the Charter of Fundamental Rights of the European Union (2007).

The charters referenced above relate to the social dimension of the European responsibilities. They are comprehensive and are a material demonstration of the commitment by the member states to the social priority. The Community Charter of the Fundamental Social Rights of Workers established the major principles on which the European labour law model is based and shaped the development of the European Social Model. The EU adopted a Social Action Programme to implement the Charter, which was instrumental in launching initiatives in employment and industrial relations policy (Eurofound 2011a). The UK Government opposed the Charter, meaning that it could not be integrated into the EC Treaty in 1989 but could still be used as an interpretative guide in litigation concerned with social and labour rights.

The Charter was subsequently incorporated into the Treaty in 2007 as the Charter of Fundamental Right of the European Union, although it contains exclusions for the UK and Poland. The Charter breaks new ground by including a single list of fundamental rights which include not only traditional civil and political rights but also social and economic rights including the rights of freedom of assembly and freedom of association, of workers representatives to information, to collective bargaining, of access to placement services, maternity and parental leave, social security and social assistance (Eurofound 2011b).

The three pillars of economic, social and environmental wellbeing in the 1997 Treaty on the European Union and the suite of social charters are a reflection of the political and social expectations of European people. It is necessary to recognise these expectations in order to understand why employers' organisations and trade unions are afforded special and protected status through the EC Treaty and the Charters. The Treaty and the Charters integrate the social partners into the fabric of the institution and the social policy regime envisaged in the Maastricht Treaty reforms (Barnard 2002; Falkner 2011).

The EU preparedness to embark on a costly program of reducing GHG emissions when other major emitters would not make a similar commitment has already been discussed. Similarly, it is appropriate to question why the EU is prepared to maintain its faith in its social partners when in some areas of responsibility they are underperforming (Barnard 2002, Ebbinghaus 2002, van den Hove 2000). These concerns are related to two main factors. Firstly, the continuing steady decline in membership of trade unions raises questions about their representativity. For France, trade union membership is 8 percent of the

workforce and Germany it is 22 percent. In the UK (as mentioned in Chapter 5) it is 26 percent, with 56 percent in the public sector and 14 percent in the private sector (EIROnline 2013). Secondly, in order to ensure good governance in environmental policy, a greater participatory approach is required than currently exists. There is a broad community of stakeholders in environmental policy development that includes industry, finance and commerce, employment, environment and consumer and citizen interests. Broader participation brings a higher degree of legitimacy to the process and allows the pooling of resources (van den Hove 2000). The challenge lies in the practical design of the engagement process and ensuring the legitimacy and representativity of the interest groups. These are issues separate from those related to the social partners' concerns and are addressed through different regulatory instruments (van den Hove 2000).

In respect of the social partners, Eurofound (2011c) research concludes that social dialogue helps to enrich the process of governance in the EU by providing informed actors to participate in the deliberative process and that the social partners are core actors in that process and must have the right to participate. The qualification to this support for the social partners and the maintenance of the democratic element in the deliberation is that the social partners still need to be representative and to be internally democratic, transparent and accountable. Accordingly, more attention needs to be paid to ensure the quality of the deliberative process (Barnard 2002, Ebbinghaus 2002, Falkner 2008). This does not fully answer the question of why the EU continues to place faith in organisations that underperform in some areas. However, it does lead to the conclusion that the EU's faith is a reaffirmation of the community's acceptance that

employers' organisations and trade unions are rightful participants in the policy process. At the European level, the peak bodies that are the social partners have almost unanimous affiliation with the organisations in the member states. It is the state organisations where the representativity is challengeable.

The European social partners are widely reported as being supportive and active participants in the process of policy development and delivery on sustainability and climate change (European Commission 2011a). The European Commission views social partners as playing an important role in the economy as a whole and the labour market in particular. With respect to climate change, the EU looks to the social partners to create consensus on the implementation of policies across industry and society. The EU has confidence in the ability and leadership of the social partners, expressing the view that "a shared analysis of employment opportunities and challenges by social partners can contribute greatly to a well-managed and socially just transition" (European Commission 2011a, p. 153).

6.3 EU climate and energy package

In March 2007, the EU leaders endorsed an integrated approach to climate and energy policy that aims to combat climate change and increase EU energy security while strengthening competitiveness. They committed to the 20:20:20 targets of a reduction in EU greenhouse gas emissions of at least 20 percent below 1990 levels; 20 percent of EU energy consumption to come from renewable resources; a 20 percent reduction in primary energy use compared with projected levels by improving energy efficiency, to be achieved by 2020 (Europa 2010a). The core package consists of four complementary programs: revision and strengthening of the Emission Trading System (ETS); an effort-sharing rule governing emission

from sectors not covered by the ETS; binding national targets for renewable energy; and a legal framework to promote the development and safe use of carbon capture and storage. The package creates pressure to improve energy efficiency but does not address it directly, which is done by the EU energy efficiency action plan (European Commission 2006). Further sectoral initiatives address sustainable mobility (EC 2011) and the construction sector, which are listed in Table 6-1. Interestingly, the implementation arrangements for this impressive and comprehensive suite of programs do not link and there are overlaps and gaps that create barriers to their effective implementation (BPIE 2011).

The development of strategies to achieve the targets of the EU Climate and Energy Package (Europa 2010a) is the responsibility of the member states and the strategies adopted differ depending on the particular features of the domestic economy, society and stages of development. The Climate Policy Tracker for the EU (WWF 2011a) is a report of the findings from surveys of all EU member states using 83 indicators to measure policy effectiveness. It finds that based on present policies and member state commitment, the EU targets will not be met and most states will only achieve one-third of their targets, with the exceptions of the major economies of France, Germany and the UK that have already met their Kyoto targets and are well on track to meet their aims under the EU Climate and Energy Package. The Climate Policy Tracker also reports that the performance for many states is defined by the ambition in EU legislation and that EU policies assist many states in formulating policy. This is not surprising but it does provide a further insight into the pervasiveness of EU legislation and policy.

Table 6-1: Construction sector initiatives

Flagship initiatives	Legislation
• Resource efficient Europe • Low carbon economy 2050 roadmap • Roadmap for a resource efficient Europe • Energy 2050 roadmap • Energy efficiency plan 2020 • Strategy for the sustainable competitiveness of the EU construction sector • Innovation Union	• Energy Services Directive2006/32/EC • Eco Design Directive 2009/30/EC • Labelling Directive • EPBD 2010/31/EU • Construction Products Directive

Source: BPIE (2011)

6.4 Social partners, employer organisations and trade unions

6.4.1 Social partners

"Social partners" is a term generally used to refer to representatives of management and labour (employers' organisations and trade unions). "European social partners" specifically refers to those organisations at the EU level that are engaged in European social dialogue as provided under Articles 154 and 155 of the Treaty on the Functioning of the European Union (Eurofound 2011c).

European law recognises as social partners the peak organisations of organisations which themselves are an integral and recognised part of member state's social partner structures and have the capacity to negotiate agreements (Eurofound 2011c). The major and representative European social partner organisations are BusinessEurope and the European Trade Union Confederation (ETUC).

The advocacy of BusinessEurope and employers' organisations in member states concerning climate change is aimed at ensuring companies remain competitive during the greening of the economy process (BusinessEurope 2013a). Their perspective of a low carbon economy is one that is framed around cost-effective policy options, investment in infrastructure, promoting green technology, ensuring a level playing field internationally, minimalist regulation and corporate social responsibility options (BusinessEurope 2013d). Activities by employers' organisations on greening the economy are generally directed at engaging in political debates, publishing position papers and promoting green skills (Eurofound 2011d).

ETUC and trade unions in member states advocate for a just transition that includes dialogue, skill adaptation and investment in green jobs (ETUC 2010). Activities by trade unions on greening the economy are generally directed toward demanding a voice as a political actor (Eurofound 2011d). Their instruments are involvement in political debates, publishing position papers, conducting training for union representatives and initiating actions in individual workplaces (Eurofound 2011d).

EU research reports that social partners in the member states are involved in policy-making on low carbon economy issues from policy formulation onwards through to implementation, where they express their positions on policy proposals and programs (Eurofound 2011a, European Commission 2011a). At the EU level, this research finds that the ETUC is an activist at the stage of policy formulation but this engagement is not shared by BusinessEurope, whose regular contribution is as a participant in a peer review panel for proposals generated by

the European Commission or Parliament. BusinessEurope's history and role will be discussed in depth in the following section.

6.4.2 Employers' organisation: BusinessEurope

BusinessEurope is a federation of national business and industry associations in Europe. The organisation's membership is made up of 41 national federations from 35 countries (BusinessEurope 2013e). It does not have sectoral associations, corporate or individual members, although it does have 55 partner companies that may access its networks within the EU and participate in its working groups (BusinessEurope 2013e). The only formal alliances maintained by BusinessEurope are with the European Commission through the EESC, and the NGOs Alliance for a Competitive Europe and Alliance for CSR. It has informal affiliations with groups formed for specific purposes such as the Climate Change Roundtable. BusinessEurope members are individually affiliated with international agencies such as the International Labour Organization (ILO) or the International Chamber of Commerce (ICC) and BusinessEurope only participates in the international climate and sustainability events as part of the Euro delegation.

The governing body of BusinessEurope is the Council of the Presidents, which determines its general strategy. The Executive Bureau comprises representatives of "the five largest countries, the country holding the EU presidency and five smaller countries on a rotation" BusinessEurope 2013e, p. 1). The Bureau monitors the implementation of the annual program, keeps other member organisations informed of progress and responds to issues as they arise. The Executive Committee is a committee of the Directors-General of all members who are responsible for translating strategy into activities and tasks. There are seven

policy committees and approximately 50 working groups supported by a secretariat of 45 staff based in Brussels (BusinessEurope 2013d).

BusinessEurope describes its main task as ensuring that company interests are represented and defended vis-à-vis the European institutions with the principal aim of preserving and strengthening corporate competitiveness (BusinessEurope 2013d). BusinessEurope explains that it is actively engaged in European social dialogue in order to find solutions reconciling the economic and social needs of labour market players and to devise concrete arrangements that benefit both companies and employees. The BusinessEurope brief for employment and social affairs responds to the concerns about rising unemployment, an ageing workforce and increased international competition. It contends that structural reforms are needed to improve labour market flexibility, secure the availability of a skilled workforce – including through economic migration - and put in place modern social policies. Their aim is to have more people in work, working more productively (BusinessEurope 2013c).

BusinessEurope is credited as always giving detailed input in all aspects of the EU climate and energy policy at the political and technical levels. It broadly supports the EU climate change objective, but insists that industry's international competitiveness and energy security should not be harmed by unilateral EU action (European Commission 2011a). Until recently, BusinessEurope had not established a profile as an opinionated advocate on environmental and related regulatory issues. Its advocacy on climate change policy was concerned with energy security and ensuring companies remain competitive in the process of greening the economy (Eurofound 2011d, BusinessEurope 2013a). However,

during 2013 BusinessEurope campaigned vigorously against the 2012 European Commission proposal for a twin tranche approach to fixing the depressed carbon market by short-term back-loading (withholding the release of the next tranche) of carbon allowances, to be followed by long-term structural change before the end of 2013 (Euractiv 2012). BusinessEurope's stance divided industry, with BusinessEurope lobbying hard against any interference in the market and, in opposition, a coalition of energy companies and others welcoming the initiative and calling for it to be extended further (Euractiv 2012).

The EU's intervention proposal was ultimately defeated in the parliament[12]. It was reported in the EU monitor Euractiv (2013) that BusinessEurope's lobbying had been strongly influential in the vote and that a letter sent by BusinessEurope's Director to the EU President Herman Van Rompuy "showed that the industry group priorities had influenced the [Parliament's] agenda" (p. 1). The subsequent release of the EC Green Paper *A 2030 Framework for Climate and Energy Policies* has seen BusinessEurope maintain its vocal advocacy, arguing the review should address the flaws in the package rather than proposing further intervention (BusinessEurope 2013b).

It appears that BusinessEurope is an effective lobbyist on matters clearly within its mandate, which is well defined and understood across the EC. The European Trade Union Institute (ETUI 2011) is less complimentary toward BusinessEurope observing that it is unwilling to look at alternative forms of regulation if they can

[12] In July 2013 the EU voted to address the oversupply of permits on the market and temporarily remove a vast quantity of permits, effectively overturning the defeat (AFR 2013).

prevent recourse to legally binding acts. This observation is consistent with the findings from this research and one that probably BusinessEurope would concur with. On matters of climate change and sustainability, BusinessEurope's interest in the achievement of the low carbon objective is framed by the requirements for competitiveness and energy security and the smooth functioning of labour markets. To that end, the evidence does not establish that BusinessEurope has a vision for the achievement of a low carbon economy, but rather a vision framed by the objective of competitiveness, a functioning labour market and energy security.

6.4.3 Trade unions: European Trade Union Confederation

The ETUC (2013a) describes its purpose as speaking with a single voice on behalf of the common interests of workers at European level. Its prime objective is to "promote the European Social Model … where working people and their families can enjoy full human and civil rights and high living standards" (ETUC 2013a, p. 1). Membership of the ETUC consists of 85 national trade union confederations from EU member states and 10 European trade union federations (ETUC 2013b). The ETUC Congress meets every four years and is responsible for the overall policy and decision-making. The Executive Committee and smaller Steering Committees are responsible for implementing policy between Congresses, while the Brussels-based Secretariat runs the day-to-day activities (ETUC 2013a).

The ETUC made the issue of climate change a priority of its sustainable development strategy in 2002 (Eurofound 2011d). It drew up the first *Union Proposal for a European Policy on Climate Change* (ETUC 2004) and actively debated proposed EU climate change legislation including the green paper on energy efficiency (ETUC 2011a), the revision of the EU's emissions trading

directive and the Climate and Energy Package (ETUC 2011a). It established a civil society coalition in 2001 with the NGOs European Environmental Platform and Platform of European Social NGOs, which annually submit recommendations for a social and sustainable Europe to the EU Councils Spring Summit (European Commission 2011b). There are debates internally between member unions about appropriate strategies and how its resources are best used. The European Trade Union Institute (ETUI) judged that the effort by the trade unions in the EU 20:20:20 campaign was weak and that European Works Councils were a resource that was there but left out of the campaign (ETUI 2011).

The ETUC also commissions research both through the union-sponsored research agency and think-tank European Trade Union Institute and independently. Their 2007 research *Climate change and employment: Impact on Employment in the EU-25 of Climate Change and CO_2 Emission Reduction Measures by 2030* (ETUC 2007) was a major contributor to the debate concerning the impact of climate change policy on the labour market. It evaluates the economic shifts and employment consequences of climate change and serves as a useful companion to the Green Jobs Report (Worldwatch Institute 2008). The major recommendations from that research are that planning for policies that have a social impact should be through tripartite forums and involve social dialogue and collective bargaining; policies should be easier to predict to allow the anticipation of the social consequences and ruptures; and measures should be taken to maximise positive spin-offs for employment and setting socially sustainable criteria for publicly funded projects (ETUC 2007).

The ETUC approach to policy development and member engagement to achieve leverage in the EU is demonstrated by its 2013 sustainable mobility research project (ETUC 2013c). The research process brought together industry stakeholders in a series of workshops and commissioned research externally to inform the policy development on sustainability in the transport sector. This process is reported as a sub-unit for this research in section 7.3. The ETUC advocacy is based on what it terms the five pillars of a just transition: stakeholder consultation; green and decent jobs; responsibility of the state; labour rights and social protection. This is a more expansive definition than the ILO pillars for a just transition of recognition of workers' rights, decent work, social protection and social dialogue (Worldwatch Institute 2008).

The ETUC is an active and committed campaigner for the social and environmental dimensions of climate change. The role of the state is central to its advocacy, contending the state should introduce binding regulation to address climate change supported by changes to relative pricing through taxation and investment in research and infrastructure (Laurent 2010). The literature establishes that its affiliated unions are equally as diligent, although their approaches are nuanced by the prevailing domestic economic, social and political concerns, and the extent of possible job losses, as in the case of Poland's coal mining and power sectors (European Commission 2011a).

6.5 Conclusion

This research establishes that the EU and member states recognise the necessity of the transition to a low carbon economy and that this transition involves social and economic opportunities and costs. This research also reinforces that the state

is the main actor in the transition, the social partners in the EU are regarded as important stakeholders and that social dialogue has an important role to play, helping to create consensus among membership for climate-related policies.

The essential difference between the ETUC and the BusinessEurope approaches is that the ETUC is actively advocating its position and flooding the discussions about social policy and climate change with research and policy papers that support its position. BusinessEurope is more issues focused, responding to current issues in order to draw attention to its policy position. The European Commission (2011b) rationalises these different approaches, saying that social partners act first and foremost where they have direct competencies. For the ETUC, this is the distribution of benefits, rights and obligations of workers, while for BusinessEurope it is how the transition to a low carbon environment will impact on the economy.

This chapter provides a number of significant contributions to the research. It explores why and how employers' organisations and trade unions are afforded the special and protected status and integrated into the fabric of the European institution. It poses the question of why the EU continues to place faith in organisations that underperform in some areas and where their legitimacy and representativity is challenged. It concludes that the EU and the member states as the statutory authorities are the main actors in the transition to a low carbon economy, and the social partners are rightful participants in the policy process and provide a supporting role.

The study also finds that in EU member states, GHG emission reduction and energy efficiency achievements are defined by the ambition in EU legislation. Additionally,

many EU policies assist states in formulating policy and the success of adaptation policies in member states requires that the social dimension is pursued.

7 Sub-case studies

7.1 Introduction

The previous two chapters of this thesis, Chapters 5 and 6, discussed the EU and UK embedded units of the case study. This research established the pervasiveness of EU legislation and directives in UK policy and practice as well as the substance of the EU and member states' experience in climate change policy. The EU's inclusion of an environmental pillar alongside economic growth and social wellbeing as one of the three pillars of the 1997 Treaty that forms the European Union made the environment and climate change a priority in planning and law and framed the ambition in the EU and across its 27 member states. For this research, the EU provides a rich source of experience in policy and practice.

This chapter continues the case study examination, moving from the regional and state experiences to sectoral and situation-specific studies. It maintains the Euro-centricity of the research, with a cameo of disaster risk management. This examination provides an insight into the sectoral employers' organisations and trade unions who deal directly with the member businesses or workers on the shop floor. This is distinctly different from the experiences of their peak organisations, whose responsibility is at the policy level and whose members are the sectoral organisations. To that extent, these studies therefore complement the data from the peak organisations.

The studies reported in this chapter investigate the construction sector in Europe and also some recent initiatives in Australia; the transport sector in Europe, particularly the policy imperatives of the peak union organisation; the changing role of civil society in international climate policy development; and the contribution of employment and workplace planning to effective disaster risk management. The common thread is the presence of employers' organisations and trade unions either as representative organisations advocating on behalf of employers and workers or as agents in an advisory role, bringing their expertise to the process of policy development and implementation.

7.2 Construction sector: the related labour market implications

7.2.1 Public policy

This section examines the implications of climate change policy for the European constructed environment labour market. It discusses whether policymakers and regulators are sufficiently informed and aware to accommodate the requirements of a low carbon workplace and whether the actors in the workplace can effectively implement the consequent technical, regulatory and social reforms required.

The constructed environment is a major contributor to economic growth and employment, providing 10 percent of global gross domestic product and between 5-10 percent of total employment, employing 14.8 million people (Eurostat 2011). It is also a major contributor to the emissions problem, using 40 percent of the world's energy and emitting 40 percent of the world's carbon footprint. Nearly half of all energy consumed in buildings could be avoided if new energy-efficient systems and equipment were installed, yet retrofits are still not occurring on the

scale required to make a significant impact on the sectors contribution to the problem (WEF 2011).

The EU was an early adopter of initiatives to reduce emissions from greenhouse gases and to move towards a low carbon economy. Its climate and energy package of 20:20:20 targets to be achieved by 2020 (as discussed in section 6.3) is supported by a suite of complementary legislation including the EU Emissions Trading Scheme, binding renewable energy targets and carbon capture and storage (Europa 2010a). Its Directive 2002/91/EC prescribes the energy performance of buildings, reflecting the Parliament's expectation of the constructed environment (Europa 2007). The energy-efficiency action plan includes energy performance requirements for a wide range of buildings, products and services. It also includes a comprehensive framework of directives and regulations. These include the Eco-Design Directive, the Energy Star Regulation, the Labelling Directive, the Directive on Energy End-Use Efficiency and Energy Services and the Energy Performance of Buildings Directive (European Commission 2006). The EU also created the "Covenant of Mayors", whose objective was to improve energy efficiency in the urban environment (European Commission 2006). To meet the outcomes required from the package, member states have developed a range of macro and micro economic strategies.

The French, UK and German governments have also implemented plans to reduce emissions in the construction sector. In France, the government has initiated the Grenelle Plan Batiment (ADEME 2011), in the UK the 2050 Pathways Analysis (DECC 2010) and in Germany its strategy involved driving down energy consumption in buildings through installation of insulation, installing modern

heating diffusion devices and installing technology to manage energy usage (Syndex 2011). These initiatives are discussed in more detail in section 3.2. The UK, France and Germany have already met their emission reduction targets under the Kyoto Protocol (Syndex 2011).

The decisive early action by the European Parliament provided the certainty required by member states, industry and investors to commit the institutional support necessary and to invest in product and business development relate to addressing climate change. It was left to the employers' organisations and trade unions to ensure that the workforce was ready in the number and with the skills required, and that the work becoming available was decent work and the workers were provided a just transition.

Despite the early action of its governing body, the retrofitting of buildings to reduce emissions within the EU has not been occurring on the scale required to meet the set targets (WEF 2011). In 2009, the Dutch Government implemented the Energy-Leap retrofit program that was designed to reduce energy leakage by retrofitting domestic dwellings (van den Munckhof 2011). This program stalled for a number of reasons. There was low consumer demand, builders were not educated or sufficiently informed of the objectives and benefits, local regulations were counter effective, there were no suitable financial instruments available and the retrofit did not provide extra property value (van den Munckhof 2011). The ILO and others contend that this is a skills issue and that both the demand and the supply side were not properly informed (Streitska-Ilina *et al.* 2011, OECD 2011). Either way, the failure of this program is a reflection of the failure of the

policymakers, the actors in the economy and civil society/social partners to effectively resource their programs for the shift to a low carbon environment.

As discussed in Chapter 6, the EU has provided an excellent framework within which member states can develop climate change programs and strategies appropriate to their specific circumstances. For the constructed environment, domestic policy and initiatives that are sometimes ad hoc and lack cohesion also benefit from the external support, the high levels of regulation and the maturity of the sector's infrastructure.

7.2.2 The labour market

Recent studies find that there are changes occurring in the labour market as a consequence of climate change (GHK Consulting 2007; ETUC 2007; Worldwatch Institute 2008). They also find that in respect of the construction sector, skills shortages are binding constraints and that it will continue to be difficult to source workers in the number and with the skills required. These changes are a reflection of the requirement for the industry to adapt to the new conditions and illustrate the scaling up required to undertake the work that will reduce the energy consumed and the volume of emissions for which the constructed environment is responsible. ILO research (Strietska-Ilina *et al.* 2011) attributes the problem to an underestimation of growth in the small and medium enterprise sectors, the general lack of scientists and engineers, national skills structures that do not meet demand and the low reputation of some occupations.

While some authorities, such as (UNEP 2008, ILO 2011e, Eurofound 2009, Pauwels *et al.* 2011) contend that the industry occupations will evolve, others (Strietska-Ilina *et al.* 2011, Friedl-Schafferhans, Gleeson *et al.* 2011) believe the

green construction team will add occupational profiles and new occupations that will require new sources of labour to supplement the existing workforce. The ILO (2011e) envisions the emergence of additional functions such as assurance, financing, research, education and policymaking. Gleeson *et al.* (2011) assert that construction teams will require competent emissions assessors, project managers, assessors, appraisers, skilled labour and auditors. Austrian research finds the additional competencies required of a new green plumber tradesperson include customer orientation, the ability to communicate and make decisions, to consult and sell, planning competencies, a high level of independence and global thinking (Friedl-Schafferhans 2011).

A labour market plan is a key responsibility of the state and industry if the transition to a low carbon economy is to be smooth and effective. This does is not involve merely the single dimension of labour and skill shortages but also the recrafting of occupational profiles and the emergence of new occupations involved in the delivery of a low carbon installation. To this must be added the new products and regulations, particular sensitivity to the introduction of new requirements and asking people to do work for which they have not been properly trained[13].

13 A Global Financial Crisis (GFC) stimulus package of labour market programs introduced by the Australian Government in 2008 included the Home Insulation Program (HIP) and Building the Education Revolution (BER) program. Each has tested the construction sector's ability to meet the challenges of quantity and quality of labour. The HIP was designed to future-proof domestic residences against rising energy requirements and to provide employment for low skilled labour (Combet 2010b). The program was introduced with a short lead time and the nature of the work triggered the involvement of most levels of regulation of the sector's labour market: vocational training system and accreditation; occupational registration; business registration; state-regulated consumer protection for domestic building and maintenance; occupational health and safety mechanisms procedures; technical standards; and product approvals systems. The program was withdrawn amidst health and safety concerns, claims of fraudulent commercial transactions, poor workmanship and substandard products (Combet 2010a). The project management by the

7.2.3 The role of employers' organisations and trade unions

The common thread that links all the actors mentioned in this section is the employers' organisations and trade unions, oftentimes referred to as the social partners. They are the representative organisations for business and the workers.

Employers' organisations and trade unions play an active role in the provision of sector and labour market information to policymakers, advocating the collective interests of their constituents who otherwise do not have the opportunity for to provide input on policy and regulatory matters. They also serve as the interface between business and labour interests, and policymakers and regulators. The responsibility of these organisations is extensive, as they must be informed advocates, they must present opinion or policy that is reflective of their membership's opinions and they must interface with their membership in a way that keeps them informed of the issues.

Employers' organisations and trade unions are accepted across the community as the representative voice and opinion for their sector and as such are often invited to provide input to public policy development and its implementation. Regarding climate change, the views about appropriate policy can vary, even amongst their own constituencies. Those views could be based on self-interest, employment retention, commercial opportunity or philosophy.

bureaucracy was also criticised as was the Minister responsible, Peter Garrett (Hawke 2010). Of particular concern is that industry provided warnings of the pending problems that were overlooked by the managing authorities. Consultation with industry is a fundamental source of on-the-ground information that is important for the effective delivery of a program.

7.2.4 Summary

There is considerable demonstrated commitment by all stakeholders to reduce GHG emissions and social dialogue in the construction sector is an established model for effective deliberation. There are also good practice examples on which to base the path for a way forward.

This section of the chapter concludes that the current initiatives in the labour market are individually suitable but government models are generally incomplete, lack cohesion and so do not deliver to the extent required by industry or the workplace actors. It was established that the market on its own is not evolving rapidly enough or with sufficient foresight to make the transition to a low carbon economy and to meet the commitments made under the multilateral climate agreements. The market requires well-targeted regulation supported by strong enforcement to drive change and innovation; incentives that influence the property owners' decision to invest in a low emission property; and the service providers to the constructed environment that are sufficiently informed to deliver a low emissions energy-efficient installation.

Given its dependence on labour from the low skilled through to the professional levels, the construction sector must insist on a policy framework in the terms proposed by the IOE (2009): of a long- term stable policy that encourages economic activity, encourages the private sector, and includes employment strategies and strategies to ensure the maintenance of skills through education and training.

In summary, this study finds the constructed environment offers significant potential to reduce energy consumption and greenhouse gas emissions. However,

the labour market can be a significant barrier to the potential available and immediate action is necessary. The social partners in this regard have an important role to play.

7.3 Transport sector: Holistic transport management and trade unions

7.3.1 Vision

This section draws on a review of the available literature relevant to sustainable mobility in Europe, paying particular attention to the impacts on employment and the workplace. It focuses on the views of the main actors and the other interests in the development of a vision for the industry as it makes the shift to sustainable mobility.

The project discussed in this section is that of the European Trade Union Confederation (ETUC) to inform the development of a policy on sustainable mobility (Glynn *et al.* 2013). The project was funded by the European Commission from its Social Fund. The project was the basis of a discussion paper produced after two workshops held December 2012 and February 2013 that were attended by stakeholders including business, politicians, bureaucrats, research institutions and trade unions (ETUC and EPE 2013). The trade union representation was from the peak sectoral unions, the national unions and the shop floor. The workshops were intended for information-gathering rather than decision-making. The consultation phase of the project concluded with a conference attended by ETUC affiliates, where presentations reflected on the contributions from the workshops and allowed the delegates to debate the issues and the proposed policy. The

outcomes from the consultations were to be submitted to the ETUC Executive Committee to resolve what would be the Unions Sustainable Mobility Policy[14].

7.3.2 The transport sector in the EU

The transport sector in Europe is a significant contributor to economic activity and society, employing approximately 10 million people, with 60 percent employed in roads, 30 percent in rail and public transport and 10 percent in air. This sector also accounts for 5 percent of GDP (EC 2011). Between 8 and 16 percent of household income is typically spent on transport (Worldwatch Institute 2008). The sector is in a period of transition as it responds to the fallout from the global financial crisis and the requirement to meet new and stringent climate and energy security performance measures (EC 2011).

Summary of the key Transport sector in Europe statistics presented in this section:

Number of Cars (global) 2012 to 2022: 1.0b to 1.3b

CO2 emissions: 25% of energy related CO2 emissions

CO2 emissions and pollutants from road transport: 40 % of CO2 emissions from urban mobility and up to 70% of other pollutants from transport

Employment: 10 million people (60% road, 30% rail and public transport, 10% air)

Emissions target: 60% less GHG emissions from transport by 2050

[14] At the time of writing the Policy proposal was still under review

Infrastructure cost to meet demand for transport: EUR 1.5 trillion for 2010–30

Employment effect of a shift from private to public transport: 10% reduction in private transport increases employment in public transport fourfold. Employment in road transport of freight would decline by 50% and the automobile sector 60%

Household income spent on transport: 8-16%

Deaths on EU roads (2009): 34500

While the objectives of all stakeholders in the EU reflect the common desire that the transport sector successfully makes the transition to a low carbon economy and meets the community's expectations of the transport system, thoughts vary about the appropriate implementation strategies. Business has expressed the need for a sectoral plan based on an efficient integration of the transport modes, unification of the existing patchwork of transport systems, and cohesion among the reform initiatives (BusinessEurope 2011). The priorities of the trade union movement are expressed as safety, quality and accessibility; respect for the environment and working conditions; and ensuring that the public service obligation is respected (ETUC 2011b).

The European Commission's (2011c) White Paper *Roadmap to a Single European Transport Area – Towards a Competitive and Resource Efficient Transport System* articulates the Commission's vision for the transport sector, and sets the targets of zero GHG emissions and a reduction to 60 percent below 1990 levels by 2050. The goal is a transport policy that underpins economic progress and enhances competitiveness, resource efficiency and high-quality mobility. It takes account of

the need to secure people's ability to travel, the current oil dependence, the growing competition from the world transport markets, the infrastructure requirements and the delivery of quality jobs and working conditions (EC 2011). Interestingly, the Greens Party in the European Parliament are not convinced the approach proposed by the Commission will meet the GHG emission reduction targets, and are instead calling for a 20 percent reduction by 2020 as a binding target. They also express the concern that the Commission's proposed investment in large-scale transport infrastructure projects is not consistent with the EU sustainability, climate change and environmental goals (GEF 2012).

Transport is seen as having a huge potential for job creation and policies aimed at reducing the volume of private and commercial road traffic by the order of 10 percent and redirecting the travel mode to rail and public transport are predicted to increase fourfold the number of direct and indirect jobs in rail and public transport (ETUC 2007). The need to transition the transport sector to sustainability is certain, as the transport system in its present form is not sustainable and must be reformed (European Commission 2011c). The Rio + 20 outcome declaration *The future we want* (UNCSD 2012) also called for a shift to "sustainable transport systems, including energy efficient multi-modal transport systems, notably public mass transportation systems, clean fuels and vehicles, as well as improved transportation systems in rural areas" (para 134).

7.3.3 Stakeholder perspectives

7.3.3.1 European Trade Union Confederation

The ETUC response to the European Commission's 2011 Roadmap for Transport (European Commission 2011c) focuses on the issues of public service obligation,

public private partnerships, pricing and the employment considerations. The ETUC (2011b) Executive Committee resolution states that transport cannot be regarded as an ordinary economic service, that it plays an important role in the community and accordingly the principles of accessibility and public service obligation must be defended. It argues that a pricing policy that requires internalising the full cost of the service is unacceptable, as it sets aside the public service obligation. It contends that to this end, the Commission should regulate instead of relying entirely on market mechanisms and that private operators must be required to maintain all sections of the service, not only the profitable sections.

The ETUC reacted to the Commission's proposals regarding employment and the workplace in the transition to a sustainable mobility model. It stated that labour should not be considered a barrier to liberalisation but as an essential component of the quality and sustainable systems in the sector (ETUC 2011b).

The policy imperatives of the ETUC are: the delivery of a multi-modal system of sustainable mobility; a sound regulatory framework; ensuring that the transition for workers is just and fair involving the provision for skills upgrading, assistance for affected workers and inclusive social dialogue; cohesive regulation and inter-departmental responsibility; engagement with the community, stakeholders, business and trade unions; investment in innovative transport technology; and supply chain management in accordance with international standards (ETUC 2013c).

Costs are also a major policy imperative. While some factions within the ETUC membership advocate for internalising of all costs so that prices reflect the costs and subsidies are removed, others advocate respect for the public service

obligation that transport is available for all in the community and access is not denied because of price. The solution is in smart pricing and taxation arrangements that satisfy all interest groups (ETUC 2013c).

7.3.3.2 Business Europe

The most recent BusinessEurope public statement on transport (BusinessEurope 2011) is also a response to the EC Roadmap (EC 2011). BusinessEurope proposes the creation of more market openings that it believes would increase efficiency, lower costs and improve mobility. Additionally, it advocates that the implementation of the Roadmap creates an opportunity to remove regulatory barriers to the efficient conduct of business, and that the Roadmap should deliver a modern transport system that encourages innovation and the take-up of technology that is ecologically sound and safe. It also argues that the EC should move to eliminate the barriers to implementation of the single transport area within Europe: it should provide incentives to encourage the introduction of new technologies (BusinessEurope 2011).

7.3.4 Features of public policy for transport sustainability

EU public policy must also take into account the myriad other issues that are integral to the achievement of a sustainable mobility policy. These include land use planning, transport infrastructure, climate change, the reduction of energy dependence, air quality and noise, security and health, and demand management. To this end, a policy vision should embrace the EU principles of supporting economic growth, social contribution and environmental responsibility. It should deliver green growth by supporting cities with less congestion, less air pollution and fewer other costs, and create jobs, particularly through the development of

public transport infrastructure. It should provide affordable and sustainable transport and energy, thereby ensuring access to basic services, housing and mobility.

In summary, public policy must embrace the commitments by the international community, including the European Union to the transition to sustainable mobility. The EU has articulated a policy framework that includes social equity, productivity, health and resilient cities. The transition to sustainable mobility will have an impact on domestic economies and the labour market. The need to ensure labour market planning and the provision of a just transition must be reflected in policy, as must the role of social dialogue and the social partners in the implementation process.

7.3.5 Barriers to change

Some researchers who dismiss transport sustainability in the EU from an economic, social and environmental perspective present a largely generic set of constraints that could be applied across other situations involving major change in the market. For example, Rietvend and Stough (2011) cite the barriers to sustainable transport as: legal constraints, lack of coherence, conflict between agencies, lack of commitment and lack of consultation. As well, the European Commission's Scientific and Technical Panel describe a similar set of behavioural and institutional constraints including wavering commitment; legal and institutional; poor co-ordination, co-operation and integration; economic and financial, individual and societal; methodological; capacity; and market or commercial (SATP 2010).

7.3.6 Barriers to a just transition

Examination of the labour dimension in the transport sector in the EU also finds barriers to a just transition for workers whose employment is impacted have features that are common across sectors. In general terms, these issues are that the policies and programs to shift to a low carbon economy often are not supported by a labour market plan to ensure the workers are available in the number and with the skills required; the vocational training and education system is not engaged with industry about the skill requirements and is ill-equipped to respond (Streitska-Ilina et al. 2011, CEDEFOP 2010, OECD 2011); and that the domestic labour law and collective agreements do not satisfactory address the requirements for a just transition (Eurofound 2011a).

A 2012 ILO study finds that the greening of the transport sector will deliver significant employment increases but entails public policy diverting investment away from roads and trucks to public transport modes (ILO 2012). The consequence is therefore likely to be large-scale shifts of employment within bands across firms in the sector and will require the major reskilling of workers. On the operational side, the occupational impacts of shifting from cars to urban transport is expected to be the most pronounced and will require retraining, skills upgrading and career moves (ILO 2012).

The ILO (2012) study concludes that skills upgrading and retraining must be part of any transition. It seems unlikely that rail and transit manufacturing could be scaled up quickly enough to absorb workers who are losing their jobs in a contracting motor industry and accordingly transition assistance for affected workers would be necessary. Certain regions are highly dependent on motor

vehicle factories and related employment. The success of any strategy would depend on the extent to which it is informed by social dialogue. Combining government resources with industry hands-on knowledge of skill relevance and quality is essential, while bringing trade union and employer associations into the mix can augment the responsiveness of education and training and trigger green transformation on a larger scale.

There are other barriers but these in many cases relate to resistance to change rather than to sustainable mobility specifically (Rietvend and Stough 2007). The barriers to the shift to sustainable mobility are generally institutional and regulatory, interdepartmental, financial and commitment. The barriers to a just transition reflect more directly on the actions of tripartite social partners who have not engaged in social dialogue to resolve the issues (SATP 2010).

7.3.7 Trade union activities promoting sustainability

Trade unions have access to a range of strategies that they can apply in their advocacy to achieve sustainable development in terms of their choosing. For example, as activists, trade unions can exert pressure on transport infrastructure public private partnerships' actors, leverage workers' purchasing power, and engage transport in a long-term dialogue on sustainable mobility and investment (Glynn *et al.* 2013). They can also act as responsible investors in their role as co-managers of industry pension funds. These funds can play a much more ambitious role in shaping a sustainable mobility strategy (Eurosif 2011).

Trade unions are strong and respected advocates in climate change and sustainability policy (Eurofound 2011a). As discussed in Chapter 3, they are active in international forums such as the UNFCCC climate negotiations and the Rio + 20

Summit. It is the commitments from these forums that frame the policy and practice of governments and the European Union. In that regard, it is important that the national unions are informed and active in the development of ETUC policy and in turn the ETUC is active in EU policy development and through the ITUC in international negotiations.

7.3.8 Summary

This section has focussed on the process to develop a sustainable transport policy for the European Trade Union Confederation. The process also involved the conduct of two industry workshops and an intra-union conference, the outcomes of which were to be presented to the Unions Executive Committee for decision later that year.

The research and consultation by the ETUC (2013c) found that the shift to sustainable mobility is good public policy and forms a key component of the EU strategy on the achievement of the targets in its 20:20:20 climate and energy package. The shift to sustainable mobility will have a significant impact on employment although manifesting as changes in employment rather than job losses. The restructuring of employment in the sector will be wide ranging and, although there is a positive multiplier effect from the shift, the transition will require a comprehensive labour market plan to ensure the transition delivers for business, workers in the number and with the skills required, and for workers the transition is fair and just.

The process has some very important roles for the union movement: as an expert adviser in the policy process, as an advocate for workers interests, and as the representatives of workers in their discussions with management about the

management of the transition and how to ensure their future requirements can be met. To that end, the process of social dialogue and engagement with the social partners is essential.

The process adopted by the ETUC (2013c) is a good demonstration of inclusive consultation to inform the policy. There were however some interesting sub texts that, while incidental to the report and the findings, help frame the context and an understanding of the relationships. For example, BusinessEurope, the peak representative body for business in Europe, was not invited to speak in the ETUC workshops program that included over 40 presentations. The only business organisation invited represented vehicle manufacturers in one of the member states (EPE 2013). The project delivery was also very astutely directed by the ETUC as an exercise in membership management, sensitive to the demarcation tensions and earning the commitment of those competing factions to the higher order policy requirement.

In conclusion, this research into the ETUC process provides an insight into the policy development process in the EU, demonstrates the role that the social partners can play and illustrates the capability and resources at their disposal. It also demonstrates why the EC and the EU value the ability of the social partners to enter into agreements with them that are binding on their members. A commitment by the trade union movement to a stable policy on sustainable development is constructive for the EC and the EU, and would not have been possible through direct engagement with the national and sectoral unions.

7.4 Effective disaster risk management

This study extends the scope of this research project beyond the physical of the construction and transport sectors and of employers' organisations and trade unions to the governance arrangements for disasters that are more often being attributed to climate change. It provides a further demonstration of the impact of climate change policy on the labour market, where the need for that policy emerges from an extreme natural event, and the effectiveness of the policy is enhanced when labour market impacts are taken into account. It follows the construction and transport studies that demonstrate the problems that arise from inadequate labour market planning and how that affects business decision-making and viability. It also discusses the issues that arise for workers, particularly the changing occupational profiles and the need for retraining, and the substantiation of the demand for a just transition. This section also examines the opportunities for pre-emptive action in this case through disaster risk management.

7.4.1 Introduction

This section of the chapter investigates the essential contribution of employment and the workplace to effective disaster risk management. The contention that underpins the section is that disaster risk management as a tool for climate change adaptation and mitigation must provide for the resumption of business and facilitate the timely return to work and normality of daily life.

The evidence of climate change impacts in the short to medium term will not be from rising mean temperatures or sea levels, but rather from increased variability of weather and more frequent and extreme events like storms, droughts, floods

and heat waves (Sanchez & Poschen 2009). It is only in recent times that natural disasters and vulnerability adaptation have been spoken about in the same context as climate change. The two have been drawn together by the rapid developments in climate science and the increasing incidence of extreme weather events, international agreements and strategies for climate change adaptation and mitigation that now extend across the established programs for natural disaster and vulnerability management.

A number of studies provide empirical evidence of the nature and quantity of the changes in the labour market that will occur as a consequence of climate change (GHK Consulting 2007: NIEIR 2010; Worldwatch Institute 2008). The changes occurring in the labour market are not only a reflection of an industrial revolution as industry moves to adapt to the new conditions as the extreme weather events are also significantly impacting industry and its workforce. In 2005, economic losses from natural catastrophes resulted in direct financial losses of about US$230 billion, representing 0.5 percent of global GDP (OECD 2009). The tsunami that hit Fukushima, Japan resulted in the deaths of more than 12,000 people and the destruction of towns and cities (ITUC 2011c). The economic and social consequences from this event are significant: Japan's industrial base is impacted, and the employment and skills profile of the region has changed and will continue to change as the cities are rebuilt to an urban model that ensures greater resilience (OECD 2009). The Worldwatch Institute (2008) green jobs report description of the changing labour market holds true for Fukushima, which will see net employment growth, jobs will be created, employment will be substituted

(move from one industry to another), jobs will be eliminated and existing jobs will transform into green jobs.

There is a demonstrated link between climate change and disaster risk management policies and labour market strategies for adaptation and mitigation. It is essential that the employment and workplace impacts of climate change policy are included in climate change policies and strategies.

7.4.2 Disasters and the impact on employment and the workplace

The impact of disasters is widely reported and the impact on employment and the workplace is apparent, although the commentary is invariably about the tragedy (for example, OECD 2009). The United Nations Office for Disaster Risk Management's (UNISDR) Hyogo Framework for Action observes that natural hazards can affect anyone and the recent disaster events have cost millions their livelihoods (ISDR 2005). In that same Framework document, the UN Secretary-General Ban Ki Moon states a goal to build resilience in the social, economic and environmental assets by 2015 (ISDR 2005).

Adherence to the UN Secretary-General's goal and the Hyogo Framework are reflected in recent post-disaster assessments and provide some guidance as to the scope of requirements from future disaster management plans (UN 2010). The UN Pakistan Disaster Risk Management Joint Programme requires outcomes of improved livelihoods and local economies in affected areas, improved household incomes through development of entrepreneurial skills, income-generating activities and diversified livelihood opportunities (UN 2010). The UN policy brief on adaptation to climate change emphasises employment in recovery from

climate-related disasters, as well as the role of labour institutions, workers and employers in designing and implementing adaptation policies (ILO 2011a).

While the commitments to action are encouraging and the declaration of higher order outcomes such as human rights and decent work defines the objectives of policy, the available policy and implementation strategies are less obvious, complicated by the fact that the situation to be dealt with will not be known in advance. All that is known with certainty is that after a disaster event there will be change and the policies and strategies must be framed accordingly. They should not disturb the priorities of the disaster risk management but certainly should form part of it, as they should with climate change policy.

Incorporating the employment and workplace considerations into disaster risk management requires a revision of the traditional approach. The Hyogo Framework describes disaster risk management as the risk management process that addresses the specific issue of disaster risk, such as improving coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster (ISDR 2005). The OECD has moved further, reporting the inclusion of economics, sociology and psychology in the process (OECD 2009). The Climate Change and Urban Vulnerability in Africa (CLUVA) project in Africa contextualises the climate change policy framework, placing the role of disaster risk management within it and the embracing of the employment and workplace issues (CLUVA 2011). This process is shown in Figure 7-1.

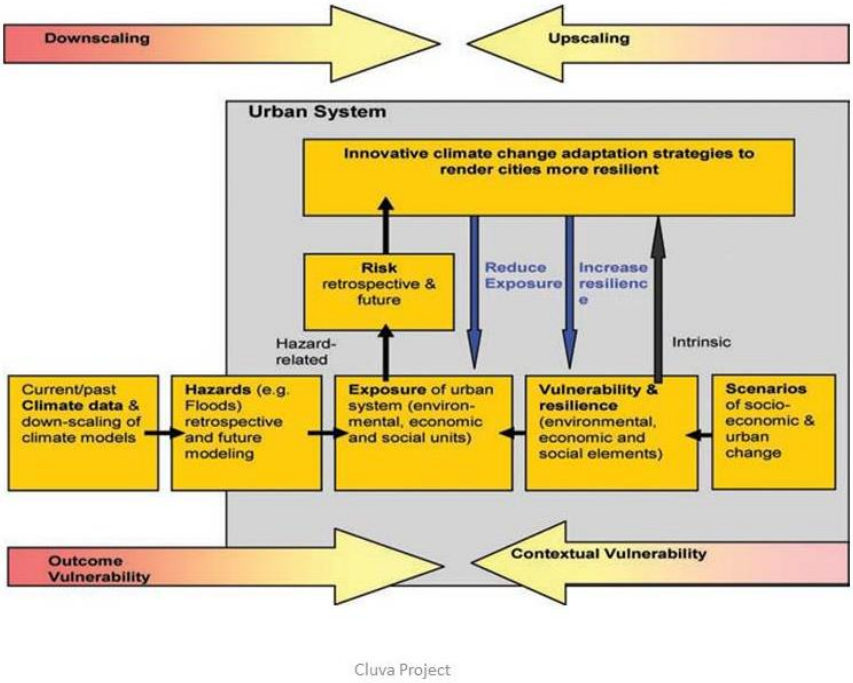
How a disaster risk management plan should be framed will be dependent on the anticipated risk. The objective should be for the resumption of employment and the payment of wages. Stern (2007) spoke of safety nets, citing the programs that

were announced in Indonesia in response to the economic, natural and political crisis in the period 1997-98. The employment creation programs that relied on self-selection targeting were found to be far more efficient in reaching the vulnerable households than programs based on health subsidies and rice sales. Equally, the Employment Guarantee scheme in the Indian state of Maharashtra has provided wage labour opportunities since the 1970s that help buffer the adverse impacts of climate change and climate variability (Stern 2007). Families are supported in the transition to other households from the after effects of poor harvests and other negative shocks.

The ILO (2011a) states that disaster risk management strategy should aim at creating conditions that will ensure:

> Those whose livelihoods, income and employment are affected by the adverse impacts of climate change and climate variability are supported in a transition to other livelihoods, income and employment. This support needs to take place in a framework that includes a fair distribution of costs, representation and employee involvement; long-term planning; and security against direct losses. In addition, there is a need at the national and local level to maximize the socio-economic impacts of the climate adaptation policies and measures taken globally (p. 1).

Figure 7-1: Climate change and urban vulnerability in Africa, 2011



Source: CLUVA seventh framework program (2011)

The FAO and ILO Livelihood Assessment Toolkit (LAT) is one of the tools available for analysing and responding to the impact of disasters on the livelihoods of people (FAO & ILO 2007). It was presented to the UNFCCC Cancun Adaptation Planning Process as a tool to enable a more effective response. Engagement with business organisations and trade unions on the grounds that "national plans (for climate change and disaster adaptation) developed through social dialogue have been shown to be more inclusive and widely supported" (ILO 2011b, p. 3) was also referenced in that intervention.

At the micro end of the policy scale are the workplace issues which, in the context of economic and social sensitivity are very important elements of the climate change adaptation policy framework in the context of economic and social sensitivity. The workplace is a highly regulated aspect of economic and labour

activity, displaced only when emergency powers are enforced and only for their specified duration. At the centre of labour regulation and administration are: the core labour standards of freedom of association and the right to collective bargaining; the elimination of forced and compulsory labour; the abolition of child labour; and the elimination of discrimination in the workplace (ILO 2009). A disaster does not change the dynamic of the workplace over which the law prevails. Issues of fair wages, occupational health and safety, respect for the worker and protection of his and her rights cannot be overruled.

Occupational health and safety issues are an ever-present responsibility, especially in relation to disaster management. European Commission studies have reflected on the psychological impact on those who are affected, both the victims and also the survivors (Social Agenda 2011). WHO research has found that exposure to heat in the workplace impacts not only on worker productivity but also physical health, stress and depression (Kjellstrom 2010). The representative organisations of employers and workers have an important role to play in this regard. Often they are the most informed about the workplace and the issues that are current and pending, not only about the employer-worker relationship but also as the advocate for the groups on statutory and technical standards in play. The ITUC was a particularly vocal advocate for workers when it accused business groups and companies of pushing to reduce protection from hazards at work. It cites the disaster at the Fukushima complex as a lesson of how critically important is regulation and enforcement are (ITUC 2011b).

7.4.3 Summary

This section of the chapter has sought to demonstrate the impact of climate change related disasters on employment and the workplace and the role of civil society, in particular business organisations and trade unions, in the management of that process.

As climate change gives rise to the increased incidence of natural disasters, so has the importance of disaster risk management become more evident. In post-disaster management, priority is being given to labour market planning and the creation of employment opportunities, noting the contribution that an income for a disaster-affected family can make to the overall recovery effort. Accordingly, pre-disaster risk management should emphasise measures to facilitate business resumption and continuity in the supply chain that in a post-disaster situation are essential to the provision of employment and with that social stability.

The important role of business organisations and trade unions in the disaster risk management process is emphasised by the United Nations and its agencies, which respect the expertise they bring to the process and also the role they can play as the interface between planners, business and the workforce at the implementation phase.

7.5 Rio + 20 outcomes and their impact on employment and the workplace

The previous sub case study moved the research from the practical application of issues arising from climate change policy to pre-emptive action through programs such as disaster risk management. It demonstrated the relationship between

disaster risk management (DRM) and programs for adaptation and mitigation of climate change, and that the employment and workplace plays an important role in recovery and therefore a DRM plan. The climate change and sustainability agreements that emerge from the annual UNFCCC COPs and the Rio + 20 Conference also serve as guides for what is effectively "disaster risk management": the actions necessary to contain the increase in average global temperatures to less than 2 degrees Celsius.

7.5.1 Introduction

The UN Rio + 20 Conference focused the attention of many across the globe on the effect that our lifestyles are having on the world's natural resources and the resultant economic and social consequences. The outcome agreement saw the Heads of State and Government reaffirm their commitment to sustainable development and include in their work plan the promotion of full and productive employment, decent work for all and social protection (UNCSD 2012, Art. 147-157). These were also recent additions to the international agreements on climate change and were at various stages of implementation in different nations (UNFCCC 2010).

The Heads of State and Government at Rio + 20 also committed to enhanced opportunities for civil society participation (UNCSD 2012). Regarding employment and the workplace, civil society through employers' organisations and trade unions had mobilised and been active as the policies and market pressures to address climate change and sustainability took effect.

This section addresses the role of employers' organisations and trade unions from two dimensions: as actors in the process of Rio + 20 and the international climate agreements; and as actors in the transition to a low carbon economy.

The outcome agreements from the recent UN events including Rio + 20 and the UNFCCC COPs have been lauded as either positive demonstrations of multilateralism or criticised as insufficient to address the environmental concerns (for example, WTO 2012, Climate Action Network 2012, BusinessEurope 2012). Time-consuming and unresolved issues from the UNFCCC COPs at Durban and Doha included intellectual property rights, finance and claims by developing nations for disaster compensation, issues which can only be described as incidental to the environmental objective (BusinessEurope 2012). The 2010 Cancun Agreement (UNFCCC 2010) and Rio + 20 added commitments to labour reform. The merits or otherwise of these additions are not at issue: at issue is whether international environmental fora are the appropriate place for them to be negotiated and whether they encumber the ability to negotiate an agreement that could address the ambition gap. The 2012 Doha COP heard argument by developed countries that other fora such as the World Trade Organisation (WTO) and World Intellectual Property Organisation (WIPO) would be better placed to resolve intellectual property issues. The same could be said of the ILO in respect of the emerging labour issues (Climate Action Network 2012).

As mentioned in Chapter 3, the 1992 Rio Earth Summit addressed concerns about the declining state of the environment and global warming. The 2012 Rio + 20 Conference addressed the three pillars of sustainable development: the environmental, economic and social. The economic and social considerations had

also been embodied in the UN Framework Convention on Climate Change (1992) agreement.

The Rio + 20 outcome agreement included in its work program an employment and workplace dimension by providing for the promotion of a just transition, decent work and social protection (UNCSD 2012). The UNFCCC climate change agreements had added a similar commitment at its 2010 Conference (UNFCCC 2010). The emergence of labour issues in formal sustainability and climate agreements reflects the growing acceptance that climate change has impacts across the broader economy and society.

The employment and workplace issues were only one of the twenty-six programs for action taken up by the Heads of State and Government in the Rio + 20's *The future we want* (UNCSD 2012). It was a larger work program than had been undertaken previously by the UNFCCC and showed signs that it may be overextended and almost certainly will not achieve the target of a less than 2 degree increase in average global temperatures. The Agreement's lack of ambition to address the environmental and climate change concerns had become "the elephant in the room".

7.5.2 Rio + 20 and the UNFCCC COPs

The formal title of Rio + 20 is the United Nations Conference on Sustainable Development, organised in pursuance of General Assembly Resolution 64/236 (A/RES/64/236). It marked the 20th anniversary of the 1992 United Nations Conference on Environment and Development and the 10th anniversary of the 2002 World Summit on Sustainable Development (Brazil CSD 2012).

The focus of the 2012 Conference was economic, social and institutional[15]. With this mandate, the Heads of State and Government reaffirmed their commitment to sustainable development and a framework of action that addressed the environmental, economic and social pillars of sustainability. Included in their action plan was the promotion of "full and productive employment, decent work for all and social protection" (UNCSD 2012a, Art. 147-157).

The labour matters introduced into the Rio + 20 agreement at Articles 147-157 are comprehensive and present a thorough checklist of rights and obligations. They are also being addressed by specialised international agencies and in many countries are already principles of national labour law and practice (ILO 2011c). The potential jurisdictional conflict is mitigated to an extent by use of terminology that has wide application and recognition in formal international and industrial texts. This could imply a UN intention to endorse existing law and practice or maybe to cooperate in their implementation of these laws and practices rather than to create new benchmarks for performance.

This section has established that the labour market is impacted by sustainability policies and that reform is occurring even as the new international agreements are promulgated. However, at the time of writing this thesis there is no evidence that the inclusion of labour issues in those agreements has had an influence in those changes. That does not mean that it will not in the future, only that it is still too early to observe any effects.

---

[15] The two themes of the Rio + 20 Conference were:
(a) A green economy in the context of sustainable development and poverty eradication; and
(b) The institutional framework for sustainable development.

7.5.3 The European Union and Rio + 20

The EU submission to the Rio + 20 *Zero Draft* (European Union 2012) was a collective submission by the government, employers, workers and civil society. They attended the conference as one delegation and did not make separate submissions or representations. They submitted that while some progress had been made, unsustainable economic growth had increased the stress on the earth's limited natural resources and on the carrying capacity of the ecosystems. In respect of the social issues, they submitted that a just transition was an essential component of an implementation strategy. They went as far as saying that "The need for a just transition to a sustainable system … is now widely recognised. The transition has great potential to promote long term sustainable growth, create decent jobs and hence eradicate poverty" (European Union 2012, S.1). Although convoluted and covering many issues, their submission reflected the principles of integrated economic, social and environmental responsibility that form the European Union.

7.5.4 Civil society, the UNFCCC and Rio + 20

Civil society has a significant presence at international negotiations and is a valuable source of specialist knowledge to negotiators. The United Nations (UN) system is generally open to contributions and participation by civil society and, in the case of Rio + 20, they were invited to make written submissions to the compilation document *Zero Draft* that became the starting point for negotiations by the governments.

The Rio + 20 outcome agreement gives formal recognition to the contribution of civil society in the preparation, declaring that: "We, the Heads of State and

Government … with the full participation of civil society, renew our commitment to sustainable development … (UNCSD 2012, article 1)". The statement is somewhat misleading as civil society was not a negotiating party at RIO + 20 and its agreement was not sought. Additionally, some civil society organisations did not want to be associated with the outcome, declaring it fell short of the action they considered necessary (Climate Action Network 2012).

As mentioned in Chapter 3, the UNFCCC has given formal recognition to almost 1300 civil society organisations as observers (UNFCCC 2011). Business and Industry, and Workers and Trade Unions formed two of the nine major civil society groups at Rio + 20. They were active throughout the two weeks of the event and had participated in the series of meetings held to negotiate the Zero Draft during the preceding twelve months.

The future we want focuses attention on civil society and creates expectation about its contribution to the implementation (UNCSD 2012, European Commission 2012). The employer and worker representative interests within civil society were active participants, although their advocacy objectives were different with business emphasising the importance of trade and investment, and trade unions the workplace.

There is increasing concern that the multilateral management arrangements are no longer capable of putting in place the measures necessary to deliver either sustainable development, or to contain the rate of global warming to less than the targeted 2 degrees. After the 2013 Warsaw COP, BusinessEurope reported that progress was slow and inefficient and as a consequence the EU should rethink its own energy and climate policies (BusinessEurope 2013f). The Climate Group

wrote of the weak outcome from that conference, noting that some tough issues were simply ignored (Ryan 2013). This followed the agreements from the 2011 Durban COP and the 2012 Doha COP which also had done little to address the ambition gap[16]. This lack of material progress does not foster confidence that the states can reach agreement on the terms for a successor to the Kyoto Protocol (Rajamani, 2012).

There are also indications that the UNFCCC process is encumbering civil society (Fisher 2010, Eastwood 2011, Climate Action Network 2012). Dana Fisher (2010), commenting with regard to on the situation at the 2009 Copenhagen COP, finds that "though non-governmental organisation (NGO) observers [civil society] had unlimited access to registration for the … negotiations, participation was significantly reduced once the negotiations began and civil society experienced increased disenfranchisement" (p. 11). She observes that the spread of civil society interests wanting to participate and the diversity of perspectives represented resulted in less opportunity for access. Eastwood (2011), in research of UN-based policy negotiations, notes that "government participants and civil society actors alike are starting to admit that, as international negotiations stall out on the global level, local actions and smaller-scale projects will be the locus of climate change mitigation and adaptation" (p. 26).

The diversity and spread of issues being addressed by these conferences provide some understanding of the pervasiveness of climate change and sustainability policy, and the reason that governments are "dancing around" the commitment to

[16] The ambition gap is the gap between the aggregate effect of states current mitigation pledges and emission pathways consistent with holding the increase in global average temperatures to below 2 degrees Celsius.

a further definitive and legally binding outcome. It also creates grounds for further research into the ability of the present international institutional structure to deliver the targeted ecological outcome.

7.5.5 Findings

This study finds that the international agreements have not yet been had a noticeable influence over domestic labour issues. It also finds that the opportunity for effective intervention in proceedings by employers' organisations, trade unions and other civil society organisations has become hampered by the increased spread of diverse issues and interests requiring attention. It concludes that a separation of the economic and social from the environmental imperative may be necessary to refocus the efforts of the multilateral process on preserving the world's natural resources and effectively managing climate change.

The 20 years since the inaugural Rio Conference has seen the evolution of policy on sustainable development from Agenda 21 to Rio + 20's focus on a framework of action that includes the promotion of full and productive employment, decent work for all and social protection This section has found that similar commitments have been made under the UNFCCC climate change agreements and also that as yet there has not been a noticeable change in domestic policy in the EU or elsewhere.

As social partners, employers' organisations and trade unions have demonstrated that they can play an important role in the shift to a low carbon and sustainable labour market. Governments have looked to them to create consensus for climate change policies across industry and society. The EU has shown confidence in their ability and leadership, expressing the view that a shared analysis of employment

opportunities and challenges by social partners can contribute greatly to a well managed and socially just transition.

There is a school of thought that civil society has been adversely impacted by the inclusion in international agreements of labour and other economic and social issues (Fisher 2010). The spread of diverse interests and the increased numbers of organisations seeking to advocate their cause has led to the restrictive regulation over the process that has made it more difficult for civil society to be effective.

There also appears to be a presumption that civil society wants a formal contributing role in the multilateral process and that it is ready and able to take on this responsibility (Climate Action Network 2012). It remains that civil society is comprised of many organisations with unique and specialised skills and interests, which often have an issue-specific mandate. The ability of civil society organisations and their interest in acting collectively is untested. Accordingly, it may require the development of a more detailed specification of what and how they can contribute before they are invited to the table.

The UN process has not been able to agree on measures sufficient to ensure the delivery of sustainable development, and to contain increases on global warming to less than 2 degrees. The process has also not been able to resolve the differences on issues such as intellectual property rights and disaster compensation.

Analysis of the international agreements in the context of the theoretical framework finds there are major differences between EM and the UNFCCC commitments. The International climate agreements are important in this analysis

because they are a template for domestic policy. The Agreements Common But Differentiated Responsibilities (CBDR) principle exempts the developing economies amongst which are the world's major GHG emitters (China, India, Brazil and Indonesia); they also mandate economic growth while overlooking the finite status of the planets resources; they add a completely new dimension – a specification of the scope of the social responsibility; and the targets will not be met. It raises the question, if EM is deemed to be increasingly relevant in public policy analysis, why is there such a significant shift away from the EM framework in the international agreements? The answer can only be that either the relevance of the theoretical framework in policy development is limited, or that the targets for the international agreements will not be met because they extend too far beyond the guiding principles of the theoretical framework. It will be recommended that this question be addressed in further research.

In summary, there are many issues that point to the need for a review of UN governance and institutional arrangements. Whatever the outcome, employment and workplace reform is essential in the transition to a sustainable low carbon workplace.

7.6 Conclusion

The research reported in this chapter investigated the construction sector in Europe; the transport sector in Europe (in particular the policy imperatives of the peak union organisation); the changing role of civil society in international climate policy development; and the contribution of employment and workplace planning in disaster risk management. The common thread was the presence of employers' organisations and trade unions working either as representative organisations

advocating on behalf of employers and workers, or as agents in an advisory role bringing their expertise to the process of policy development and implementation.

The construction sector study finds that the impacts of climate change policy and regulation on the construction labour market are material and will require targeted initiatives both in the supply of labour and skills if the industry is to provide the capacity required for the work. The constructed environment offers significant potential to reduce energy consumption and greenhouse gas emissions. However, the labour market creates a significant barrier to the potential available and immediate action is necessary. The social partners in this regard have an important role to play.

The restructuring of employment in the transport sector as it transitions to sustainable mobility will be wide ranging and, although there is a positive multiplier effect from the shift, the transition will require a comprehensive labour market plan to ensure the transition delivers for business workers in the number and with the skills required and that for workers the transition is fair and just. The process finds two very important roles for the union movement: both as an expert adviser in the policy process as an advocate for workers interests, and as the representative of workers in their discussions with management about the transition and how to ensure their future requirements can be met. To that end, the process of social dialogue and engagement with the social partners is essential.

In post-disaster management, priority is being given to labour market planning and the creation of employment opportunities and understanding the contribution that an income for a disaster-affected family can make to the overall recovery effort. Accordingly, pre-disaster risk management should emphasise measures to

facilitate business resumption and continuity in the supply chain that in a post-disaster situation is essential to the provision of employment and with that social stability. The important role of business organisations and trade unions in the disaster risk management process is emphasised by the United Nations and its agencies, which respect the expertise they these groups bring to the process and also the role they can play as the interface between planners, business and the workforce at the implementation phase.

In summary, the studies find an important role for employers' organisations and trade unions across a very diverse range of situations that convey the contribution by actors such as the social partners with be tailored to the situation, the region and the dynamics of the domestic market and society.

8 Discussion

8.1 Introduction

This chapter tests the propositions and evaluates the findings from the research reported in the previous chapters. There are four dimensions to the discussion: three that relate directly to the propositions - the labour market; employers' organisations and trade unions; ecological modernisation - and a fourth that emerges from the research as a relevant influence, civil society. The role of civil society in ecological modernisation theory, and as a recognised and representative stakeholder of which employers' organisations and trade unions are constituents is discussed.

8.2 Revisiting the research contention

In Chapter 1 it was contended that the theoretical framework guiding public policy development, ecological modernisation, should embrace labour market considerations and should identify employers' organisations and trade unions as the stakeholder representatives integral to the attainment of the ecological outcome. This contention led to the following research question:

> *Does the theory of ecological modernisation adequately reflect the role of employers' organisations and trade unions in the development of climate change policy?*

The propositions designed to explore this research question were:

Proposition 1: The labour market is significantly impacted by climate change policy

Proposition 2: The ecological outcome is impacted by the effectiveness of labour market planning

Proposition 3: Employers' organisations and trade unions are important actors in the development and implementation of the labour market plan

Proposition 4: Employers' organisations and trade unions are important actors in ecological modernisation theory

After the analysis of the results, the propositions and the research questions are discussed.

8.3 The labour market

The propositions designed to explore this contention are Proposition 1: the labour market is significantly impacted by climate change policy, and Proposition 2: the ecological outcome is impacted by the effectiveness of labour market planning.

The early research discussed in Chapter 3 with regard to the impacts on the labour market of climate change policy by GHK Consulting for the European Union (2008), the WorldWatch Institute (2008) for the UNEP/ILO/IOE/ITUC Green Economy Initiative and the ETUC (2007) research concludes that jobs will be lost, jobs will be created, jobs will change and all sectors of industry will be affected by climate change. The research concluded there is a need for labour market planning. These findings are reiterated by the OECD in its more recent research *Green Jobs and Skills: The Local Labour Market Implications of Addressing Climate hange* (Martinez-Hernandez *et al.* 2010). The OECD and the ILO also remind of the

necessity for the labour market plan to have a skills policy component. They also find that skills policies in place are often not appropriate to the task at hand and that often the education and training system is not linked closely enough to industry to be certain the training provided will meet the needs of the market (Strietska-Ilina *et al.* 2011).

The related industrial relations issues represent a significant shift in traditional practice. The ITUC (2011a) claims that climate change is a matter for collective bargaining, as does the ACTU (Morris 2010) at the domestic level. In response, the IOE contends that climate change may be a matter for social dialogue if it is raised by either of the social partners at the workplace, but it is not an issue for collective bargaining and should not be a matter for which the social partners expect a negotiated outcome (IOE 2009).

It appears that for trade unions, climate change has provided an opportunity to re-establish their relevance in the workplace after the shift away from centralised collecting bargaining and the significant and continuing decline in membership (Eurofound 2011d). In France where union penetration is at only 8 percent, the unions' authority is established through their statutory right to represent workers on government advisory bodies and industry agencies such as pension fund boards (Ebbinghaus 2002). In the UK where private sector membership penetration had dropped to 14 percent and unions do not have authority conferred through statute in the way of the French unions, the TUC introduced it Green Workplaces program to demonstrate to workers and management its relevance in the management of contemporary workplace issues (TUC 2010).

There is much written about the social partners and what they can bring to the development and implementation of climate change policy in member states (for example Eurofound (2011d), Eurofound (2009)). In the EU through the EESC, the employers organisations and trade union contribution is as members of a panel to review initiatives by the state or as activists presenting policy proposals such as the ETUC's sustainable mobility policy project (ETUC 2013).

This research has established that the labour market is impacted by climate change policy and that a labour market plan inclusive of skills policies is necessary for the smooth transition to a low carbon economy and the delivery of a workforce in the number and with the skills required. Claims that employers' organisations and trade unions are key players in the process of developing climate change policy are not always supported by the evidence and they do not always consider it a priority in relation to other commitments that also require the allocation of resources, matters discussed further in the next section.

8.4 Employers' organisations and trade unions

The contention that inspires Proposition 3 is that the theoretical framework guiding policy development should identify employers' organisations and trade unions as stakeholder representatives integral to the ecological outcome. If they are to be identified, the research must establish that the labour market is impacted by climate change policy, and that employer organisations and trade unions are important actors in the process of developing the labour market plan and therefore effective climate change policy. This section addresses the contention at Proposition 3 and provides the platform for the review of Proposition 4, the

contribution to the theory of Ecological Modernisation and whether it should be revised.

While the research question and the Proposition use the terms "employers' organisations" and "trade unions" in the same context, it is incorrect to view them as having the same aims and objectives or to assess their performance using the same criteria. Firstly, they are defined differently, with employers' organisations defined as collective organisations of employers formed to defend a common interest (Blackwell 1999) and trade unions as collective organisations of employees formed to safeguard the terms and conditions of their members (Blackwell 1999). In essence, a trade union is an industrial organisation whereas an employer's organisation is a representative organisation for business whose responsibilities include industrial relations. David Plowman (1978) describes unions as activists on workplace issues while employers' organisations are representatives of businesses that have a like interest. The difference in the *raison d'être* is demonstrated at the UNFCCC COPs, where the Trade Union Major Groups has an agreed industrial relations and socially focused manifesto and a singular interest in worker representation, while the Business and Industry Major Group does not table a manifesto and is not afforded an advocacy mandate by its constituents who each attend and represent their individual interests.

Research by advisory bodies such as Eurofound (2011d), CEDEFOP (2010), OECD (2013b) and ILO (2012) finds that social partners, employers' organisations and trade unions have an important role to play in the development of climate change policy and the transition to a low carbon economy. The research also finds that the institutional framework of the EU confers authority on the social partners even

though they are not necessarily the most capable or most representative organisations. In practice, the contribution of the social partners in the member states to the process of developing climate change policy reflects different levels of commitment. Their work program does not always prioritise climate change but rather reflects the current issues of the day.

The research found that what is a priority issue in one state may bear no resemblance the work program in another state that has a different economic profile, and where the history, culture and tradition has cultivated different relationships. The UK study in particular demonstrated how culture, history and tradition can frame the statutory influences, attitudes and priorities of an organisation. For example, with labour relations, in which the UK Government has traditionally adopted a non-interventionist approach, negotiations occur at the level of the workplace and collective bargaining is voluntary. This means that the members' expectations for service by CBI and TUC are different that from the service delivery expectations of employers' organisations and trade unions members in other EU member states where the labour market and the role of the social partners is more regulated. The EU member states are also at different stages of economic and institutional development, therefore accordingly the contributions by the social partners and the outcomes of social dialogue across the member states will vary.

In sum, the research finds that climate change and the consequent requirements for labour market planning are not always priorities for employers' organisation and trade unions and the policy development process does not always benefit by

their contribution. Accordingly, it cannot be said that the research finding support Proposition 3.

8.4.1 Employers' organisations

Franz Traxler (2010) observes that in contrast to trade unions, little is written about employers' organisations and accordingly little is known. While earlier in this section employers' organisations were defined clearly and succinctly, their role and function is understood only by those who are familiar with them or who are involved with labour relations. Other terms used more commonly to describe employer organisations are industry associations, business organisations and chambers of commerce. These terms refer to the primary function of the organisation, of which labour relations and employer advocacy is only one. For example, the Confederation of British Industries (CBI) is the largest of the business associations in the UK and is an advocate on issues including the economy, trade, youth, manufacturing, environment, sectoral issues, education, skills and employment. Unlike most peak business organisations in Europe, it does not have an industrial relations mandate or a role in collective bargaining.

It is contended by Plowman (1978) that business comes together only to respond to the activity of trade unions and that when the issue that brought them together is resolved those businesses will dissipate. In practice, this means that their attention is on the issues that impact the wellbeing of business and, if at any one time the issue impacting on business is initiated by trade unions, then that is the issue that will hold their attention. BusinessEurope provided a demonstration of the Plowman contention with its response to the EU's proposed intervention in the operation of the EU ETS (as discussed n section 6.4.2). BusinessEurope, which

did not have a high profile on environment and climate change issues, raised that profile when the EU intervention in the operation of the ETS impacted the wellbeing of business (BusinessEurope 2013d).

The CBI study that was the first data collection exercise in the sequence of this research, generated serious doubts about the validity of the contention that employers' organisations were important actors in the development and implementation of the labour market plan. The CBI do not prioritise workplace issues or labour market planning, particularly as they relate to climate change policy. Further, the UK Government choses to engage directly with industry as well as or instead of CBI. Proposition 3 contends that employers' organisations and trade unions are important actors in the development and implementation of the labour market plan. The findings from the theory and the case studies do not support that proposition.

8.4.2 Trade unions

As has already been observed, employers' organisations and trade unions, while of equal status in international and labour market affairs, are formed for different reasons and have different motivations. Trade unions are collective organisations of employees' formed to safeguard the terms and conditions of their members (Blackwell 1999).

The trade union movement has a long record of demonstrated activism on the environment and climate change. They were participants in the 1992 Earth Summit and have attended the related events every year since. The trade union movement's hierarchical structure strengthens their ability to effectively advocate their policy platform and also binds their member unions. This makes them one of

the few social movements that have consistency between international, regional and national organisations over policy, governance and representativity. It also means they have access to resources and infrastructure to support and inform their work. The trade union movement also sponsors dedicated research facilities and intellectual think tanks such as SustainLabour and the European Trade Union Institute.

The case study foci in this research were on a regional and a national peak union: the ETUC and the UK TUC respectively. Their situations are completely different and so therefore is assessment of the effectiveness of their roles in relation to climate change. The TUC is experiencing declining membership, it has no mandated role in a collective bargaining process and it has limited influence in government. The ETUC is less exposed to the direct membership pressures and is not engaged in member representation on win/lose issues such as collective bargaining. It has a formal role in the policy process conferred through the constitution of the EU. This is a privileged position, but still requires a professional and committed engagement if the opportunity is to be mobilised.

The study of the ETUC finds a dynamic organisation with a policy agenda that provides the platform for its advocacy before the European Commission. On climate change and sustainability, its advocacy for a just transition and decent work has been a consistent theme, although in the European context these are standard practice, as they are principles on which the EU was formed. The report of the ETUC sustainable mobility policy development discussed in Chapter 7.3 demonstrated the process of engaging a broad range of stakeholders and interest groups to inform the policy options.

The UK TUC is a professional organisation with an extensive network across the UK and is influential within the trade union movement in Europe and internationally. The TUC,s policy on climate change and sustainability is largely framed by ETUC and ITUC policy. As discussed at Chapter 5, climate change is seen as providing the opportunity for unions to re-engage with workers and to demonstrate the union's relevance in contemporary society and workplace (TUC 2012, Eurofound 2011d). The TUC's Green Workplaces project (TUC 2010) opportunistically seeks to favourably reposition the union during the transition to a low carbon workplace and promoting the central role of the trade union (Syndex 2011). The project and related programs are also being used by the TUC to leverage authority in workplace negotiation. The union's Greener Deal Guide is prima facie to provide union workplace representatives an explanation of the climate change issues, but also explains to members how climate change can be used as a vehicle for union renewal, how it can extend the union consultation agenda and how union involvement in the environmental agenda can bring new members (TUC 2012a).

The study finds that the ETUC and the UK TUC are active climate change advocates. The ETUC influence in the EU over policy for labour market and climate change is not replicated by the TUC in the UK. The culture and rules of engagement between government and NGOs in the UK mitigate the opportunity for the TUC to effectively influence government on labour market policy and climate change.

Proposition 3 contends that employers' organisations and trade unions are important actors in the development and implementation of the labour market plan. From the perspectives of the ETUC and the TUC, the contention holds in

theory and ambition, but the practice finds that their efforts are not always effective or objective and that they are at least in part motivated by the opportunity to promote the role of trade unions. For that reason, the contention could only hold if it was amended to provide that they "would like to be" important actors in the development and implementation of the labour market plan. This is not an appropriate amendment to the proposal for a mandate to revise the theory of ecological modernisation.

8.5 Ecological modernisation theory

Chapter 4 provides an in-depth analysis of ecological modernisation theory (EMT). Analysis of the theory found that it was a suitable and appropriate theoretical framework for the research. However, in its present form its contribution is as a theoretical framework only and there have been negligible efforts to operationalise the theory. The research reported in that chapter demonstrates that even though there is a range of interpretations which can result in EM's functionality becoming obscured (for example, Christoff 1996, Howes *et al.* 2010) the rationale can be harnessed, the theory operationalised and the propositions tested.

This section discusses the test of Proposition 4, which contends that employers' organisations and trade unions are important actors in ecological modernisation. The research found that the beneficial contribution to the process by employers' organisations and trade unions is conditional on their interest and capability. While these findings add to the body of knowledge concerning EMT, they are not sufficiently compelling to require the theory being rewritten. It also found that EMT is not sufficiently mature to recognise core activists specifically, neither is it

able to specify social partners or others beyond the parameters of civil society. To that end, the results from the test of Proposition 4 are negative and the proposition fails.

The research did not establish that the contention was flawed. Rather, it found that EMT is not sufficiently well structured to allow specification of the competencies that are brought to the theory by each of the components. To include employers' organisations and trade unions as a component in the theory is to specify the competencies they bring, an exclusive attribute that would be inconsistent with the present construct of the components.

However, and while the proposition failed the test, it is argued that this research advances the theory. The process of developing a model to operationalise the theory found it supported three possible outcomes and therefore three possible policy frameworks. The research also found that the achievement of the outcomes is dependent on the policy choices that must also take into account the distinctive political, institutional and cultural features, the national economic importance of the sectors and the extent of the environmental impact on those industries.

The research establishes the importance of establishing and maintaining relationships that are open and democratic and ensuring that social movements are engaged (Howes *et al.* 2010; Christoff 1996). Within this scenario, the role for employers' organisations and trade unions (social partners) is as civil society actors whose opportunities are enhanced in the stronger versions of EM.

8.6 Civil society

This section analyses the findings from the research that will inform consideration of the research question. While informing that question, the analysis drew attention to the recognition that civil society (as a collective of civil society organisations) is afforded in international events and in the formal outcomes. As such, it was considered that it may be appropriate to explore the implications for EMT and whether there should be comment in the conclusions from this research.

Civil society is one of the components of ecological modernisation theory, alongside technology and innovation, the state, market, and ecological consciousness. EM theorists have generally regarded civil society as environmental activists (Mol 2001, Mol *et al.* 2009) and it is only in recent times that some theorists have broadened their definitions. The climate change community adopts a broader understanding of civil society and generally accepts it comprises the wide array of non-governmental and not-for-profit organisations that have a presence in public life (World Bank 2013) and make up the almost 1,300 organisations approved by the UNFCCC (UNFCCC 2011).

The agreements from Rio + 20 Conference, and the UNFCCC COPs' move to involve civil society further in the negotiation and the formal process. Nicholas Ashford (2002) and others warn that efforts to integrate civil society into the system may see them take over and even interfere with the progress of the necessary change. Others express the converse, that inviting them into the system will have the effect of softening their impact. Despite these concerns, integrating civil society into the formal process is the stated intention of the current international agreements. This process of homogenisation is unlikely to divert the efforts of civil society

organisations from their cause. The process of harnessing their commitment for the purposes of engaging in UN negotiations could be quite complex and one must doubt the unanimity of purpose required to represent the collective of civil society interests can be achieved.

The move to embrace civil society in the formal negotiating process is one of a number of indicators that the process for these multilateral negotiations is being redefined and casts doubt on the ability of the outcomes to achieve the emission reduction targets. The following are indicators of the cracks that are starting to appear in the UNFCCC process:

1. Since the 2009 COP in Copenhagen, civil society participation has progressively and sharply decreased before plateauing in 2013 in Warsaw, (2009, 26000 delegates; 2010, 6400; 2011, 5900; 2012, 3300; 2013, 3695. (UNFCCC Conference Reports).
2. The major corporate interests have stopped attending, and governments are less committed to honouring undertakings such as financial commitments (Eastwood 2011).
3. Agreements to address climate related problems are being negotiated and struck outside the UNFCCC process. The US Government initiative, led by the then Secretary of State Hilary Clinton, to form the Climate and Clean Air Coalition of 26 governments with the objective of reducing pollutants not being covered under UNFCCC accounting is an example of this (CCAC 2013).
4. Membership of the traditional political blocks formed to negotiate the agreements within the UNFCCC are shifting, thereby redefining the

> geographic and political spheres of interest, and the strategic balances of power in the negotiating blocks (Climate Action Network 2012).

Eastwood (2011), in research on UN-based policy negotiations, observes that government participants and civil society actors alike are starting to admit that, as international negotiations stall out on the global level, local actions and smaller-scale projects will be the locus of climate change mitigation and adaptation.

The trade union movement at all tiers of governance - international, regional and state - have presented the uniform message of worker rights and a just transition. They claim it was their lobbying that achieved the support of negotiators to include the just transition and decent work provisions in the agreements (ITUC 2012). The thematic focus of employers' organisations is that business is an essential component in the policy delivery and agreements therefore must be sensitive to their need to remain competitive and efficient. Their principal issues of interest are energy security and trade. They have not responded to the workers' rights claims of the trade unions, leaving the unions' demands uncontested. Their advocacy themes are shared by BusinessEurope and CBI.

This research does not find support for the contention that employer' organisations and trade unions are important in the ecological outcome. The research has, however, established that they are an active and effective component of the fabric of civil society, making a strong case for the EM theorists to move beyond the narrow conception of civil society as environmental activists.

8.7 Testing the propositions and answering the research question

The sections in this chapter have analysed four dimensions of the discussion: the labour market, employers' organisations and trade unions, EMT and civil society. The purpose of the analyses is to test the research propositions, and then to answer the research question, "does the theory of ecological modernisation adequately reflect the role of employers organisations and trade unions in the development of climate change policy?" The research established that the contention is flawed and therefore the answer to the research question is in the negative.

The presumption was that employers' organisations and trade unions are engaged with the state in the formal process of labour market planning. From this, it was believed that intervention by employers' organisations and trade unions through labour market planning could guide the changes that would occur in the labour market in response to climate change.

This research established that labour markets' adjustments occur in response to changes in the market with or without an effective domestic labour market planning process. It also established that there is no one model that is applicable to all markets and situations and the market response is very much a product of the culture, history, economic base and stage of development of the market. In the European member states, the one common element of governance is European laws and directives.

Proposition 1: The labour market is significantly impacted by climate change policy.

The analysis finds in favour of this contention and agrees that that the labour market is impacted by climate change policy. There is no opposing argument to this contention. The labour market and the skills modelling by institutions such as the OECD, the ILO and the EU have projected the labour market changes expected to occur due to climate change policy.

Proposition 2: The ecological outcome is impacted by the effectiveness of labour market planning.

The analysis finds qualified support for this contention. While there is a compelling body of research advocating in favour, there are also examples of the converse, where the ecological outcome has been achieved with minimal formal planning or intervention in the labour market. For example, the UK, as a major industrialised economy, is meeting its international and domestic climate change and energy efficiency undertakings but does not engage effectively in labour market planning.

However, the UK Government's Committee on Climate Change has expressed the view that the present programs will need to be significantly scaled up if it is to meet its future carbon budget commitments. If the targets are not met, it may then be considered that a contributing factor was the lack of planning for the labour and skill requirements. To that end, it may be appropriate to retest this Proposition at the end of the UK climate budget cycle in 2016.

Proposition 3: Employers' organisations and trade unions are important actors in the development and implementation of the labour market plan.

This research does not find in favour of the contention. The analysis concludes that the beneficial contribution to the process by employers' organisations is

conditional on their interest and capability. The contention holds in theory and ambition in respect of trade unions, but the practice finds that they are required to direct their resources to those activities of current interest and in which the union can deliver an outcome.

On these grounds, the conclusion must be that while employers' organisations and trade unions can be important actors in the process, their commitment is conditional and therefore cannot be considered integral to the effective policy development and delivery of the labour market plan.

Proposition 4: Employers' organisations and trade unions are important actors in ecological modernisation theory.

The analysis does not find in favour of this contention. The analysis concludes that the theory has not matured to a stage where a structure is formed against which the contention can be properly tested. The analysis finds that EMT is not sufficiently mature to allow specification of the core activists, and neither is it able to specify social partners or others beyond the parameters of civil society.

It is appropriate to comment that the contention would most likely have failed on merit. This research finds that for employers' organisations particularly and trade unions, the transition to a low carbon economy is only one of their many tasks they are required to address for members and accordingly its priority is conditional and their responsiveness is also conditional.

Research Question: Does the theory of ecological modernisation adequately reflect the role of employers' organisations and trade unions in the development of climate change policy?

The testing of the propositions finds that only Proposition 1 successfully defends the contention, that the labour market is significantly impacted by climate change policy. Of the other propositions, the tests do not support the contention that the ecological outcome is impacted by the effectiveness of labour market planning, and finds only qualified support for the contention that employers' organisations and trade unions are important actors in the process and, while they serve the needs of their members in an effective and efficient manner, climate change policy is not always a priority.

This analysis finds that the evidence does not support an amendment to the ecological modernisation theory on the grounds of the contribution to the process by employers' organisations and trade unions. On that basis, the answer to the research question is that the theory of ecological modernisation theory adequately reflects the role of employers' organisations and trade unions in the development of climate change policy.

The findings make a strong contribution to the theory, reaffirming its relevance as an appropriate theoretical framework informing the policy development process, developing the understanding and the extent of the role of civil society within the theoretical framework, and extending the considerations beyond the theory to its operationalisation. These issues are included in the recommendations for further research.

9 Conclusions and recommendations

9.1 The research question

This research contended that the theoretical framework guiding public policy development, ecological modernisation, should embrace the labour market considerations and should identify employers' organisations and trade unions as the stakeholder representatives integral to the attainment of the ecological outcome. This contention led to the following research question:

> *Does the theory of ecological modernisation adequately reflect the role of employers' organisations and trade unions in the development of climate change policy?*

The propositions designed to explore this research question were:

> *Proposition 1: The labour market is significantly impacted by climate change policy*
>
> *Proposition 2: The ecological outcome is impacted by the effectiveness of labour market planning*
>
> *Proposition 3: Employers' organisations and trade unions are important actors in the development and implementation of the labour market plan*
>
> *Proposition 4: Employers' organisations and trade unions are important actors in ecological modernisation theory*

The research found that the labour market is significantly impacted by climate change policy. However, it does not support the contention that the ecological

outcome is impacted by the effectiveness of labour market planning and finds only qualified support for the contention that employers' organisations and trade unions are important actors in the development and implementation of the labour market plan. The evidence does not support the contention that employers' organisations and trade unions are important actors in ecological theory. On the basis of the evidence and the testing of the proposition, this study concluded that the research question is answered in the affirmative.

9.2 The European context

This research found that in the European context the state is the main actor in the transition to a low carbon economy, providing the framework for action through policies and regulation. The study also found that in EU member states, GHG emission reduction and energy efficiency achievements are defined by the ambition in EU legislation. Additionally, many EU policies assist states in formulating policy and the success of adaptation policies in member states requires that the social dimension is pursued.

The EU social partners, the peak employers' organisations and trade unions have a preferred status born in statute, a situation not commonplace in other industrialised regions. While there is a body of opinion that contends the inclusion of employers' organisations and trade unions in the transition planning and the process of social dialogue can facilitate the smooth and just transition to a low carbon workplace, the contention is not supported by the research findings. The study found that employers' organisations and trade unions are not a significant influence over the domestic policy outcome and their advocacy is often a reaction to proposals of government rather than in support of a strong policy position. Civil

society environmental organisations on the other hand, have been and remain a major influence over public policy.

9.3 The labour market

This research contended that the labour market is significantly impacted by climate change policy and that employer organisations and trade unions are integral in the process of labour market planning. The presumption was that employers' organisations and trade unions were engaged with the state in the formal process of labour market planning. From this, it was believed that intervention by employers' organisations and trade unions through labour market planning could guide the changes that would occur in the labour market in response to climate change policy. This research established that the contention is flawed and labour markets' adjustments occur in response to changes in the market with or without a domestic labour market planning process. It also established that there is no one model that is applicable to all markets and situations and the market response is very much a product of the culture, history, economic base and stage of development of the market. In the European member states, the one common element of the labour markets are the requirements of European laws and directives.

9.4 Ecological modernisation theory

The research finds that ecological modernisation is a suitable and appropriate theoretical framework for the research. However, in its present form its contribution is as a theoretical framework only as the theory has not been operationalised.

The research did not support the contention that the ecological outcome is impacted by the effectiveness of labour market planning. The research did not establish that the contention was flawed, rather that EM is not sufficiently well structured to allow specification of the competencies that are brought to the theory by each of the components. To include employers' organisations and trade unions as components in the theory is to specify the competencies they bring: an exclusive attribute that would be inconsistent with the present construct of the components.

However, while the proposition failed the test, it is argued this research advances the theory by extending EM from a theory to practice with the objective of constructing a framework and an implementation model. The process of developing a model to operationalise the theory found it supported three possible outcomes and therefore three possible policy frameworks that are each consistent with EM. It was also found that the achievement of the outcome is dependent on policy choices that must also take into account the distinctive political, institutional and cultural features, the national economic importance of the sectors and the extent of the environmental impact on those industries. This is critical in the context of this research project, as it is only by committing to an outcome that the state can make the effective policy interventions that will lead to the required outcome. The choice of outcome will dictate whether policy requires a strong science orientation (Outcome 1), whether policies will be seeking to deliver progress toward absolute sustainability (Outcome 2) or whether they deliver a target such as GHG emission reduction (Outcome 3).

The principles developed in this research that seek to harness the rationale of EM by harmonising the range of interpretations that Christoff (1996) says blur its usefulness, and that provide the platform for operationalising the theory, can be summarised as follows:

- EM is a theory that embodies general and/or abstract principles concerned with the relationship between the economy and the environment (discussed at Chapter 4.2.2.1).
- EM is defined as the relationship between the market and innovation and the interventions of the state, civil society and ecological consciousness to decision making in the pursuit of harmonisation of the environment and the economy (discussed at Chapter 4.2.2.4).
- Standardised definitions of the components EM are necessary to strengthen governance, to develop the capacity and resources for the sound application of the policy, and to enforce the process of policy application including achievement of outcomes (discussed sat Chapter 4.2.2.5).
- There are not one but three possible outcomes from the application of EM principles: a strong science focus addressing environmental concerns, a process oriented model to realise harmonisation of the economy and the environment, and the achievement of a specified outcome such as a GHG emission reduction target (discussed at Chapter 4.3.1). From the selected outcome of the appropriate pathway can be identified and hence the interventions necessary to achieve that outcome.

These principles allow the development of a template for action to operationalise the theory (discussed in Chapter 4. 5.1) and is reproduced here:

1. Orientation to an EM theoretical framework:

    a. Adopt as a policy objective for harmonisation of the economy with the environment

    b. Adopt standardised definitions of EM and its components to strengthen governance, to develop the capacity and resources for the sound application of the policy, and to enforce the process of policy application including achievement of outcomes.

Outcome selection:

    c. Determine the outcome required - is it a strong science based focus addressing environmental concerns, a process-oriented model that can achieve harmonisation of the economy and the environment, or the achievement of a specified outcome such as a GHG emission reduction target?

Pathway identification:

    a. Identify the pathway by applying EM to establish the interventions that will deliver the desired outcome
    b. Preference should be given to policies that are evidence based rather than on an incremental basis

Applying the interventions:

    d. Establish EM oriented leadership, a vision and a plan

    e. Reform and/or design policies to be implemented

    f. Implementation strategies developed and applied

    g. Monitor and evaluate and adjust

9.5 Recommendations

The research brought to light a number of issues that invite further consideration.

The research contention relied on the view that employers' organisations and trade unions were active in labour market planning and that, if climate change impacted the labour market, they would have a role in the development of policy in response. The contention was found to be incorrect and employers' organisations and trade unions did not consistently prioritise the labour market dimension of climate change policy and did not effectively participate in labour market planning. Although the contention was found to be incorrect, there remains the expectation by agencies such as the OECD, the EU and the ILO that there is a need for labour market planning in climate change and that employers' organisations and trade unions are the appropriate bodies to do this work. To that end, it is recommended further research be undertaken to determine the conditions required for employers organisations and trade unions to prioritise labour market planning and to engage effectively in the process.

This research extended the theoretical framework of ecological modernisation to an operationalised model. It also established that there can be more than one pathway and policy framework. To that end, it is recommended that further research be undertaken to firstly harmonise the multiple interpretations, and then to develop the concept of multiple pathways that present as options in the process of its operationalisation.

This research also found that the opportunities for employers' organisations and trade unions as civil society actors were enhanced in the stronger versions of EM, and that in international climate change negotiations they were influential actors

in the civil society movement. Further research that develops the role of employers' organisations and trade unions as civil society actors would potentially advance the understanding of the role of civil society in the operationalising of EM.

The research sought to inform consideration of the process to operationalise EM by overlaying the EM template on the EU and UK environmental policies and the international climate change agreements. It found that the EU is a good model of EM and its environmental targets will be met, the UK adopts the EU policy but is not such a good model of EM and unless the programmes are scaled up significantly the targets will not be met, and there are major differences between EM and the UNFCCC commitments and the targets will not be met. It established that where the policy targets were at risk of not being met, there were variations between the EM standard and the policy application, and there were a range of further requirements in the policy beyond the scope of EM such as the Common But Differentiated Responsibilities exemption in the international agreements. These findings invite further research into the role of EM in public policy and whether the overlaying of the EM template on policy proposals to identify where the gaps in policy may exist can facilitate the operationalisation of the theory, and inform the policy development process.

9.6 Conclusions

The testing of the propositions finds that only Proposition 1 successfully defends the contention that the labour market is significantly impacted by climate change policy. The tests do not support the contention that the ecological outcome is impacted by the effectiveness of labour market planning and find only qualified support for the contention that employers' organisations and trade unions are

important actors in the process and that while they serve the needs of their members in an effective and efficient manner, climate change policy is not always a priority.

This analysis finds that the evidence does not support an amendment to ecological modernisation theory on the grounds of the contribution to the process by employers' organisations and trade unions. On that basis, the answer to the research question is that the theory of ecological modernisation theory adequately reflects the role of employers' organisations and trade unions in the development of climate change policy.

References

ACEI. (2013). Alliance for a competitive European industry. Retrieved 28 September, 2013, from http://www.businesseurope.eu/content/default.asp?PageID=605

ADEME. (2011). The social housing stock. Retrieved October 23, 2011, from http://www.plan-batiment.legrenelle-environnement.fr/index.php/g-les-4-secteurs/le-parc-des-logements-sociaux

Ashford, N. A. (2002). Governmental and environmental innovation in Europe and North America. *American Behavioural Scientist, 45*(9), 1417-1434.

Bailey, I., & Rupp, S. (2006). The evolving role of trade associations in negotiated environmental agreements: The case of United Kingdom climate change agreements. *Business Strategy and the Environment, 15*(1), 40-54.

Barnard, C. (2002). The social partners and the governance agenda. *European Law Journal, 8*(1), 80-101.

Barzelay, M. (1993). The single case study as intellectually ambitious inquiry. *Journal of Public Administration Research and Theory: J-Part, 3*(3), 305-318.

Beck, U. (1992). *Risk society. Towards a new modernity.* Sage Publications Ltd.

BIS. (2008). *Lisbon strategy for jobs and growth: UK national reform programme.* London: Department for Business, Industry and Skills, UK.

BIS. (2012). *Trade union membership 2011.* London: Department for Business, Industry and Skills, UK.

Blackstock, K. L., Richards, C., Kirk, E. A., Chang, Y. C., & Davidson, G. (2006). Participation and regulation: Where two worlds collide? *Participatory Approaches in Science and Technology Conference, Edinburgh* http://www.Macaulay.Ac.uk/PATHconference/outputs/PATH_abstract_1.1.1.Pdf

Blackwell. (1999a). The Blackwell dictionary of political science: Employers organisations. Retrieved May 22, 2013, from http://www.credoreference.com.ezproxy.bond.edu.au/entry/bkpolsci/employers_organisation

Blackwell. (1999b). The Blackwell dictionary of political science: Trade unions. Retrieved April 15, 2013, from http://www.credoreference.com.ezproxy.bond.edu.au/entry/bkpolsci/trade_unions

Blaikie, N. (2000). *Designing social research*. UK and USA: Polity Press.

BPIE. (2011). *Europe's buildings under the microscope: A country-by-country review of the energy performance of buildings.* Brussels: Buildings Performance Institute Europe.

Braun, R. (2010). Social participation and climate change. *Science & Business Media,* (12), 14 March 2012-777-806.

Brazil CSD. (2012). *Rio + 20 guide.* Rio de Janeiro: UNCSD.

BusinessEurope. (2008). *Combating climate change: Four key principles for a successful international agreement.* Brussels: BusinessEurope.

BusinessEurope. (2011). *Policy briefing: The future of transport.* Brussels: BusinessEurope.

BusinessEurope. (2012). *Doha climate conference: Absence of level playing field requires EU climate and energy rethink.* Brussels: BusinessEurope.

BusinessEurope. (2013a). Climate change. Retrieved May 31, 2013, from http://www.businesseurope.eu/Content/Default.asp?PageID=657

BusinessEurope. (2013b). BusinessEurope urges the 22 May 2013 European Council to focus on lifting obstacles to growth. *BusinessEurope Press Release,* (May 17), 1.

BusinessEurope. (2013c). Employment and social affairs. Retrieved May 31, 2013, from http://www.businesseurope.eu/content/default.asp?PageID=592

BusinessEurope. (2013d). Mission and priorities. Retrieved 31 May, 2013, from http://www.businesseurope.eu/content/default.asp?PageID=582

BusinessEurope. (2013e). AS group - our major companies. Retrieved March 10, 2013, from http://www.businesseurope.eu/Content/Default.asp?pageid=604

BusinessEurope. (2013f). COP19: BusinessEurope calls for more commitment towards an inclusive global climate deal. *BusinessEurope Press Release, November* (23), 1.

Buttel, F. H. (2000). Ecological modernisation and social theory. *Geoforum,* (31), 57-65.

C20. (2012). Civil20 process. Retrieved April 14, 2013, from http://dialogues.civil20.org/G20_process

Cambridge. (2006). Cambridge dictionary of sociology: Trade unions. Retrieved May 22, 2013, from qurl=http://www.credoreference.com.ezproxy.bond.edu.au/entry/cupsoc/trade_unions

CARE Australia. (2010). Community based adaptation enabling environment. *NCCARF Conference, June 2010, Gold Coast, Poster Presentation,*

CBI. (2007). *Climate change: Everyone's business.* London: Confederation of British Industry Climate Change Task Force.

CBI. (2009). *All together now: A common business approach for greenhouse gas emissions reporting.* London: Confederation of British Industry.

CBI. (2011). *Mapping the route to growth, rebalancing employment.* (June 2011). London: Confederation of British Industry.

CBI. (2012). Climate change and business: The role of business. Retrieved May 15, 2012, from http://www.cbi.org.uk/business-issues/energy-and-climate-change/climate-change-and-business/the-role-of-business

CCAC. (2013). The history of the CCAC. Retrieved December 23, 2013, from www.unep.org/ccac/Home

CEDEFOP. (2010). *Skills for green jobs, European synthesis report.* Luxembourg: European Union.

Christoff, P. (1996). Ecological modernisation, ecological modernities. *Environmental Politics, 5*(3), 476-500.

Climate Action Network. (2012). ECO 7, RIO+20, English version. *CAN Newsletter, Rio + 20*(7)

CLUVA. (2011). Climate change and urban vulnerability in Africa, seventh framework programme. Retrieved September 16, 2011, from www.amracenter.com

Cohen, M. (1997). Risk society and ecological modernisation. Alternative visions for post-industrial nations. *Futures, 29*(2), 105-119.

Cohen, M. (2000). Ecological modernisation, environmental knowledge: A preliminary analysis of the Netherlands. *Environmental Politics, 9*(1), 77-106.

Combet, G. (2010). *Ministerial statement; home insulation program.* Canberra: Department of Climate Change and Energy Efficiency, Commonwealth of Australia.

Combet, G. (2010). *Non-government organisation roundtable on climate change.* Canberra: Minister for Climate Change and Energy Efficiency, Commonwealth of Australia.

Cridland, J. (2011). *Achieving competitive, secure energy in a low-carbon economy.* London: Confederation of British Industry.

Cridland, J. (2012). The heat is on. We need decisions on energy. *The Times*, *April* (19)

Croucher, R., Tyson, S., & Wild, A. (2006). 'Peak' employers' organisations: International attempts at transferring experience. *Economic and Industrial Democracy, 27*, 463-484.

CSP. (2013). Civil society politics: Civil society definition. Retrieved May 26, 2013, from http://civilsocietypolitics.org/manifesto/

Dalber Global Development Advisors. (2009). *Climate change, the anatomy of a silent crisis: Human impact report.* Geneva: Global Humanitarian Forum.

de Boer, R., Benedictus, H., & van der Meer, M. (2005). Broadening without intensification: The added value of the European social and sectoral dialogue. *European Journal of Industrial Relations, 11*(1), 51-70.

DECC. (2007). *Meeting the energy challenge: A white paper on energy.* London: Department of Trade and Industry UK.

DECC. (2009). *The UK low carbon transition plan.* (White Paper, Amended 20th July 2009 from the version laid before Parliament on 15th July 2009). London: Department of Energy and Climate Change UK.

DECC. (2010). *2050 Pathways Analysis.* London: Department of Energy and Climate Change UK.

DECC. (2011a). *The Carbon Plan: Delivering a low carbon future.* London: Department of Energy and Climate Change. UK.

DECC. (2011b). *Climate Change Act 2008.* (Chapter 27). London: HM Government UK.

DECC. (2011c). The greenhouse gas effort sharing decision. Retrieved March 6, 2012, from http://www.decc.gov.uk/en/content/cms/emissions/ghgsd/ghgsd.aspx

DECC. (2011d). *Energy Act 2011.* London: HM Government UK.

DECC. (2011e). *Annual Report 2010/11.* London. Department of Energy and Climate Change UK.

DECC. (2011f). *3rd progress report.* London: Committee on Climate Change, Department of Energy and Climate Change. UK.

DECC. (2011g). *Progress report 2011: Adapting to climate change in the UK. Measuring progress.* London: Department of Energy and Climate Change UK, Committee on Climate Change, Adaptation Sub Committee.

DECC. (2012a). 2050 pathways analysis, the 2050 challenge. Retrieved February 14, 2012, from www.decc.gov.uk/en/content/cms/tackling/2050/3050.aspx

DECC. (2012b). Davey puts energy saving at heart of strategy. *2012* (09), 8 February 2012.

DECC. (2012c). Green deal. Retrieved January 30, 2012, from http://www.decc.gov.uk/en/content/cms/tackling/green_deal/green_deal.aspx

DECC. (2012d). The green deal and energy company obligation consultation. Retrieved February 7, 2012, from http://www.decc.gov.uk/en/content/cms/consultations/green_deal/green_deal.aspx

Dresner, S., Jackson, T., & Gilbert, N. (2006). History and social responses to environmental tax reform in the United Kingdom. *Energy Policy, 34*(8), 930-939. doi:10.1016/j.enpol.2004.08.046

Dryzek, J. S., Downes, D., Hunold, C., Schlosberg, D., & Hernes, H. (Eds.). (2009). *Ecological modernisation, risk society, and the green state*. Oxon: Routledge.

Eastwood, L. (2011). Climate change negotiations and civil society participation: Shifting and contested terrain. *Theory in Action, 4*(January), 8-38.

Ebbinghaus, B. (2002). Trade unions' changing role: Membership erosion, organisational reform, and social partnership in Europe. *Industrial Relations Journal, 33*(5), 465-483.

ECA UK. (2011). *2021 vision: The future of the electrical contracting industry.* London: NICEIC, Electrical Contractors Association UK.

EIROnline. (2013). Industrial relations country profiles. Retrieved May 28, 2013, from http://www.eurofound.europa.eu/eiro/country_index.htm

Eisenhardt, K. M. (1989). Building theories from case study research. *The Academy of Management Review, 14*(4), 18.

EPE. (2013). *Green workplaces 2013: Workers for sustainable mobility.* Brussels: European Partners for the Environment.

Esty, D., & Porter, M. E. (2005). National environmental performance: An empirical analysis of policy results and determinants. *Environment and Development Economics,* (430), 391-434.

ETUC. (2004). Union proposals for a European policy on climate change. Retrieved December 23, 2013, from www.etuc/a/250

ETUC. (2007). *Climate change and employment. Impact on employment in the EU-25 of climate change and CO2 emission reduction measures by 2030.* Brussels: European Trade Union Confederation.

ETUC. (2010). *Climate change: The new industrial policies and ways out of the crisis.* Brussels: European Trade Union Confederation.

ETUC. (2011a). *European social partners dialogue on climate change.* Brussels: European Trade Union Confederation.

ETUC. (2011b). *Resolution: European Commission's transport white paper.* (Executive Committee Meeting 19-20 October 2011). Brussels: European Trade Union Confederation.

ETUC. (2013a). Structure. Retrieved May 31, 2013, from http://www.etuc.org/r/11

ETUC. (2013b). Our aims. Retrieved May 31, 2013, from http://www.etuc.org/r/2

ETUC. (2013c). *Holistic transport management and trade unions.* Brussels: European Trade Union Confederation.

ETUI. (2011). *Benchmarking working Europe 2011.* (No. 13/2011/10574/08). Brussels: The European Trade Union Institute.

EUPOLITIX. (2013). European Union law. Retrieved May 25, 2013, from http://www.eupolitix.com/eu-law.html

Euractiv. (2010). France catching up with other member states on environment. Retrieved September 30, 2010, from www.euractiv.com

Euractiv. (2012). Brussels rolls out carbon market fix. Retrieved August 5, 2012, from http://www.euractiv.com/print/climate-environment/

Euractiv. (2013). EU summit set to turn agenda on climate change upside down. Retrieved May 26, 2013, from www.euractive.com/energy

Eurofound. (2009). *Greening the European economy: Responses and initiatives by member states and social partners.* (No. EF/09/72/EN). Dublin: European Foundation for the Improvement of Living and Working Conditions.

Eurofound. (2011a). Community charter of the fundamental social rights of workers. Retrieved June 4, 2013, from http://www.eurofound.europa.eu/areas/industrialrelations/dictionary/definitions/communitycharterofthefundamentalsocialrightsofworkers.htm

Eurofound. (2011b). European social model. Retrieved August 8, 2012, from http://www.eurofound.europa.eu/areas/industrial relations

Eurofound. (2011c). European social partners. Retrieved May 28, 2013, from http://www.eurofound.europa.eu/areas/industrialrelations/dictionary/definitions/europeansocialpartners.htm)

Eurofound. (2011d). *Industrial relations and sustainability: The role of social partners in the transition to a green economy.* (No. EF//11/26/EN). Dublin: European Foundation for the Improvement of Living and Working Conditions, 2011.

Europa. (2007). Energy efficiency: Energy performance of buildings. Retrieved October 23, 2011, from http://europa.eu/legislation_summaries/other/l27042_en.htm

Europa. (2010a). Environment and employment. More than the sum of their parts: The links between environment and employment policies. Retrieved October

10, 2010, from http://ec.europa.eu/environment/integration/employment_en.htm

Europa. (2010b). The EU climate and energy package. Retrieved October 1, 2010, from http://ec.europa.eu/environment/climat/climate_action.htm

Europa. (2012a). Environmental integration. Retrieved August 8, 2012, from ec.europa.eu/environment/integration/integration.htm

Europa. (2012b). Treaty of Maastricht on European Union. Retrieved August 7, 2012, from http:// europa.eu/legislation_summaries/institutional_affairs/treaties_maastricht

European Commission. (2006). *Action plan for energy efficiency: Realising the potential.* (No. COM (2006) 545 final). Brussels: European Commission.

European Commission. (2011a). *Consulting European social partners: Understanding how it works.* Luxembourg: European Union.

European Commission. (2011b). *Industrial relations in Europe 2010.* Luxembourg: European Commission.

European Commission. (2011c). *White paper: Roadmap to a single European transport area-towards a competitive and resource efficient transport system.* Brussels: European Commission.

European Commission. (2011d). *The EESC: A bridge between Europe and organised civil society.* (No. EESC-2011-08-EN). Brussels: European Commission. European Economic and Social Committee.

European Community. (1999). 1997 consolidated version of the treaty establishing the European community. Retrieved May 27, 2013, from eur-lex.europa.eu/en/treaties/dat/12002E/.../C_2002325EN.003301.htmlCached

European Parliament. (2001). Charter of the fundamental rights of the European Union. Retrieved June 4, 2013, from http://www.europarl.europa.eu/charter/default_en.htm

European Union. (2010). *Consolidated versions of the treaty on European Union and the treaty on the functioning of the European Union 2010/C 83/01.* Brussels: European Union.

European Union. (2011). *United Nations conference on sustainable development: (RIO + 20) Rio de Janeiro, 4-6 June 2012. Contribution by the European Union and its member states to the UN Department of economic and social affairs.* Brussels: European Union.

European Union. (2012). *Rio + 20: Outcome and follow up to the UNCSD 2012 summit.* Brussels: Council of the European Union.

Eurosif. (2011). *Corporate pension funds and sustainability investment study.* Paris: Eurosif.

Eurostat. (2011). Construction sector statistics. Retrieved October 23, 2011, from http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Construction_sector_statistics

Falkner, G. (2011). The Council or the social partners? EC social policy between diplomacy and collective bargaining. *Journal of European Public Policy, 7*(5), 705-724.

FAO, & ILO. (2007). *The livelihood assessment tool-kit: Analysing and responding to the impact of disasters on the livelihoods of people.* Rome: Food and Agriculture Organisation; International Labour Organisation.

Fisher, D. (2010). COP-15 in Copenhagen: How the merging of movements left civil society out in the cold. *Global Environmental Politics, 10*(2), 11-17.

Fisher, D. R., Fritch, O., & Skou Anderson, M. (Eds.). (2009). *Transformations in environmental governance and participation*. Oxon: Routledge.

Flyvbjerg, B. (2006). Five misunderstandings about case-study research. *Qualitative Inquiry, 12*(2), 219-245.

FoE. (2008). History of the big ask. Retrieved February 27, 2012, from www.foe.co.uk/news/big_ask_history_15798.html

Friedl-Schafferhans, M. (2011). *Qualification-green jobs.* Brussels: Walqing-European Trade Union Institute.

Garnaut, R. (2008). *The Garnaut climate change review.* Melbourne: Cambridge University Press.

GEF. (2012). *EU 2012 policy priorities - transport policy.* Brussels: Green European Foundation.

Gerring, J. (2006). Single-outcome studies: A methodological primer. *International Sociology, 21*(5), 707-734.

GGKP. (2013). *Scoping paper: Moving towards a common approach on green growth indicators.* Geneva: Green Growth Knowledge Platform.

GHK Consulting. (2007). *Links between the environment, economy and jobs.* (No. J3476 – Final report). London: European Commission, DG Environment.

Gleeson, C., Yang, J., & Lloyd-Jones, T. (2011). *European retrofit network: Retrofitting evaluation methodology report.* London: University of Westminster.

Glynn, P., Torregrossa, M., & Van Ermin, R. (2013). *Holistic transport management and trade unions. Background paper preparing the first ETUC-EPE laboratory.* Brussels: European Partners for the Environment.

Goertz, G., & Mahoney, J. (Eds.). (2009). *Scope in case study research*. London: SAGE Publications Ltd.

Golmohammadi, B. (2012). Civil society and Rio + 20. *UN Chronicle, 49* (1/2), 7-8.

Gonzales, G. A. (Ed.). (2009). *Democratic ethics and ecological modernisation*. Oxon: Routledge.

Goode, W. J., & Hatt, P. K. (1952). *Methods in social research*. New York: McGraw-Hill.

Guyatt, G., Oxman, A., Vist, G., Kunz, R., Falck-Ytter, Y., Alonso-Coello, P., & Schünemann, H. (2008). Grade: An emerging consensus on rating quality of evidence and strength of recommendations. *British Medical Journal, 336*(April), 924-926.

Hache, A. (2011). *Under the radar: The contribution of civil society and third sector organisations to eInclusion.* Luxembourg: European Commission Joint Research Centre.

Hajer, M. (1995). *The politics of environmental discourse: Ecological modernization and the policy process.* London: Oxford University Press.

Hall, N. L., & Taplin, R. (2007). Solar festivals and climate bills: Comparing NGO climate change campaigns in the UK and Australia. *Global Warming: Energy Security or Energy Sovereignty?* 1-15.

Hawke, A. (2010). *Review of the administration of the home insulation program.* Canberra: Australian Government, Department of Climate Change and Energy Efficiency.

Hayes, M. (2007). *Incrementalism* Sage Publications Inc.

Head, B. (2010). Evidence-based policy: Principles and requirements in strengthening evidence-based policy in the Australian federation. *Roundtable Proceedings, Canberra: Productivity Commission,* 13.

Howes, M., McKenzie, M., Gleeson, B., Gray, R., Byrne, J., & Daniels, P. (2010). Adapting ecological modernisation to the Australian context. *Journal of Integrative Environmental Sciences,* (7 (1)), 1-2-17.

Huber, J. (1991). Ecological modernisation: Beyond scarcity and bureaucracy. *Technologie En Milieubeheer,* 167-183.

Huber, J. (2008). Pioneer countries and the global diffusion of environmental innovations: Theses from the viewpoint of ecological modernisation theory. *Institute of Sociology, Martin Luther University, D-06099 Halle an Dar Saale, Germany, May 12*

Hyman, R. (2001). *The strategic orientations of trade unionism*. London: Sage Publications.

ICC. (2010). *Business, part of the solution.* Paris: International Chamber of Commerce.

ICC. (2012). *Green economy roadmap.* (No. Doc 213-18-8). Paris: International Chamber of Commerce.

ILO. (2009). *Rules of the game: A brief introduction to international labour standards.* Geneva: International Labour Organisation.

ILO. (2011). *Submission to the UNFCCC on the Cancun adaptation forum on enhanced action and adaptation with specific reference to article 17.* Geneva: International Labour Organisation.

ILO. (2011a). Advancing work on adaptation to climate change: A UN system perspective-policy brief. Retrieved May 28, 2011, from http://greenjobs-ap.ilobkk.or.th/resources/advancing-work-on-adaptation-to-climate-change-a-un-system-perspective-policy-brief

ILO. (2011c). Decent work agenda. Retrieved September 16, 2011, from http://www.ilo.org/global/about-the-ilo/decent-work-agenda/lang--en/index.htm

ILO. (2011e). *Skills and occupational needs in green building.* Geneva: International Labour Office, Skills and Employability Department.

ILO. (2012). *Working towards sustainable development: Opportunities for decent work and social inclusion in a green economy.* Geneva: International Labour Office.

IOE. (2009). *Climate change; information paper.* Geneva: International Organisation of Employers.

IPCC. (2008). *Climate change 2007 synthesis report.* Geneva: Intergovernmental Panel on Climate Change.

ISDR. (2005). *Hyogo framework for action 2005-2015: Building the resilience of nations and communities to disasters.* Geneva: United Nation International Strategy for Disaster Reduction.

ITUC. (2011a). What do we want in Cancun? A just transition NOW! Retrieved April 11, 2011, from http://www.ituc-csi.org/what-do-we-want-in-cancun-just.html?lang=en

ITUC. (2011b). *ITUC meeting of the working group on climate change.* Brussels: International Trade Union Confederation.

ITUC. (2011c). Anti-regulation agenda threatens health and safety-ITUC. Retrieved May 31, 2011, from www.ituc-csi.org

ITUC. (2012). Growing green and decent jobs. Retrieved May 17, 2012, from http://www.ituc-csi.org/IMG/pdf/ituc_green_jobs_summary_en_final.pdf

ITUC. (2013). *Warsaw farce provides one more reason for mobilising on climate change.* Brussels: International Trade Union Confederation.

Janicke, M. (2008). Ecological modernisation: New perspectives. *Journal of Cleaner Production,* (16), 557-565.

Janicke, M., Binder, M., & Monch, H. (1997). Dirty industries: Patterns of change in industrial countries. *Environmental and Resource Economics, 9*(4), 467-491.

Jokinen, P. (2000). Europeanisation and ecological modernisation: Agri-environmental policy and practices in Finland. *Environmental Politics, 9*(1), 138-167.

Kelly, J., & Heery, E. (1994). *Working for the union*. London: Cambridge University Press.

Kjellstrom, T. (2010). In Glynn P. (Ed.), *Impact of climate change on working people* (June 29). Gold Coast: Email.

Lange, H., & Garrelts, H. (2007). Risk management at the science-policy interface: Two contrasting cases in the field of flood protection in Germany. *Journal of Environmental Policy and Planning, 9*(3-4), 263-279.

Langhelle, O. (2000). Why ecological modernisation and sustainable development should not be conflated. *Journal of Environmental Policy & Planning, 2*(4), 303-322.

Laurent, E. (2010). *Environmental justice and environmental inequalities: A European perspective.* (No. Issue 3/2010). Brussels: ETUI.

LCS.R Net. (2011). *Transition towards low carbon societies in a changing world: Science and policy for low carbon society development pathways.* (Third Annual Meeting). Japan: Institute for Global Environmental Strategies on behalf of the International Research Network for Low Carbon Societies.

Levitt, R., & Solesbury, W. (2005). *Evidence-informed policy: What difference do outsiders in Whitehall make?* (Working Paper 23). London: ESRC UK Centre for Evidence Based Policy and Practice.

Lock, G. (2006). The big ask gets top-quality response. *Third Sector, London* (420), 14.

Macquarie. (2013). Employers' associations. Retrieved April 15, 2013, from http://www.credoreference.com.ezproxy.bond.edu.au/entry/mdpo/employers_associations

Mahoney, J., & Larkin Terrie, P. (Eds.). (2009). *The proper relationship of comparative-historical analysis to statistical analysis: Subordination, integration, or separation?* London: SAGE Publications Ltd.

Marsden, T., Yu, L., & Flynn, A. (2011). Exploring ecological modernisation and urban-rural eco-developments in China: The case of Anji County. *The Town Planning Review, 82*(2), 195-225.

Martinez-Fernandez, C., Hinojosa, C., & Miranda, G. (2010). *Green jobs and skills: The local labour market implications of addressing climate change.* (No. CFE/LEED (2010)4). Paris: OECD.

Merriam-Webster. (2013). Market definition. Retrieved June 23, from http://www.merriam-webster.com/dictionary/market

Merriam-Webster. (2013). Technology definition. Retrieved 23 June 2013, from http://www.merriam-webster.com/dictionary/technology

Merriam-Webster. (2013). Theory definition. Retrieved July 6, 2013, from http://www.merriam-webster.com/dictionary/theory

Meyer, J., Boli, J., Thomas, G., & Ramirez, F. (1997). World society and the nation-state. *The American Journal of Sociology, 103*(1), 144-181.

Ministère de l'Écologie. (2010). Green growth mobilisation plan. Retrieved October 13, 2010, from http://www.developpement-durable.gouv.fr/

Miranda, G., & Larcombe, G. (2012). *Enabling local green growth: Addressing climate change effects on employment and local development.* Paris: OECD Local Economic and Employment Development (LEED).

Mol, A. (2001). *Globalisation and environmental reform*. London: Massachusetts Institute of Technology.

Mol, A. (Ed.). (2008). *Environmental reform in the information age*. New York: Cambridge University Press.

Mol, A., & Sonnenfeld, D. (2000). Ecological modernisation around the world: An introduction. *Environmental Politics, 9 (1): 3-16* (Spring)

Mol, A., Sonnenfeld, D., & Spaargaren, G. (Eds.). (2009). *The ecological modernisation reader: Environmental reform in theory and practice* (First ed.). London: Routledge.

Morris, S. (2010). Fresh face, ACTU role makeover. *Australian Financial Review* (5 July).

Nagel, S. (1999). *Policy analysis methods*. Commack, N.Y: Nova Science Publishers.

NHRMC. (2007). *National statement on ethical conduct in human research (2007) - updated December 2013.* (No. E72). Canberra: National Health and Medical Research Council.

NIEIR. (2010). *Creating jobs-cutting pollution. The roadmap for a cleaner, stronger economy.* Melbourne: National Institute of Economic and Industry Research, ACTU and ACF.

OECD. (2009). *Studies in risk management: Innovation in country risk management.* Paris: Organisation for Economic Cooperation and Development.

OECD. (2010). *United Kingdom policies for a sustainable recovery.* London: Organisation for Economic Cooperation and Development.

OECD. (2011). *Green growth strategy synthesis report.* (No. ECO/CPE/WP1 (2011)2/ADD1). Paris: Organisation for Economic Cooperation and Development, Economic Policy Committee.

OECD. (2013). *Putting green growth at the heart of development.* Paris: Organisation for Economic Cooperation and Development.

Pare, G. (2004). Investigating information systems with positivist case study research. *Communication of the Association for Information Systems, 13*, 233-264.

Parsons, W. (2002). From muddling through to muddling up - evidence based policy making and the modernisation of British government. *Public Policy and Administration, 17*(3), 43-60.

Patton, M. Q. (2002). *Qualitative research and evaluation methods*. Thousand Oaks, California: Sage Publications.

Pauwels, F., Den Kamp, H., & Ramioul, M. (2011). *Greening in construction and the impact on work: New challenges or more of the same?* (No. 4). Leuven, Belgium: Walqing Social Partnership.

Pellow, D., Schnaiberg, A., & Weinberg, A. (2000). Putting the ecological modernisation thesis to the test: The promises and performances of urban recycling. *Environmental Politics, 9*(1), 109-137.

Pfeifer, S., & Sullivan, R. (2008). Public policy, institutional investors and climate change: A UK case-study. *Climatic Change, 89*(3-4), 245-262. doi:10.1007/s10584-007-9380-y

Plowman, D. (1978). Employer associations: Challenges and responses. *Journal of Industrial Relations, 20*, 237-262. doi:10.1177/00221856802000301

Porter, M. E. (1990). *The competitive advantage of nations*. London: Macmillan.
Porter, M. E., & van der Linde, C. (1995). Green and competitive: Ending the stalemate. *Harvard Business Review,* (September-October), 120-134.

Radford University. (2012). Environmental history timeline. Retrieved March 6, 2012, from http://www.radford.edu/-wkovarik/envhist/4industrial.html

Rajamani, L. (2012). The Durban platform for enhanced action and the future of the climate regime. *International and Comparative Law Quarterly, 61*(2), 501-518.

Rietvend, P., & Stough, R. (2007). *Barriers to sustainable transport: Institutions, regulation and sustainability*. London: Taylor and Francis.

Ryan, D. (2012). COP 18 wrap-up: Weak Doha outcome. Retrieved February 12, 2013, from www.theclimategroup.org/what-we-do/news-and-blogs/cop-18-wrap-up

Ryan, D. (2013). *Post COP19 briefing.* (November). London: The Climate Group.

Sanchez, A., & Poschen, P. (2009). *The social and decent work dimensions of a new agreement on climate change. A technical brief.* Geneva: International Labour Organisation.

SATP. (2010). *Advancing sustainable low-carbon transport through the GEF.* Washington: Global Environment Facility, Scientific and Technical Advisory Panel.

Sayer, A. (2008). Case studies and a single, differentiated reality. *Qualitative Research in Accounting and Management, 5*(1), 11-14.

Scheer, A., & Hoppner, C. (2010). The public consultation to the UK climate change act 2008: A critical analysis. *Climate Policy, 10*, 261-276.

Schmidt, J. (2008). Why Europe leads on climate change. *Survival: Global Politics and Strategy, 50*(4), 83-96.

Simonis, U. (1989). Ecological modernisation of industrial society. 3 strategic elements. *International Social Science Journal, 41*(08), 347-361.

Smismans, S. (2008). The European social dialogue in the shadow of hierarchy. *Journal of Public Policy, 28*(1), 161-180.

Smith, A. (1996). Mad cows and ecstasy: Chance and choice in an evidence-based society. *Journal of the Royal Statistical Society, 159*(3), 367-383.

Social Agenda. (2011). Investing in wellbeing at work: Addressing psychological risks in times of change. *Social Agenda, July* (27), 11.

Sonnenfeld, D. (2000). Contradictions of ecological modernisation: Pulp and paper manufacturing in South-East Asia. *Environmental Politics, 9*(1), 232-256.

Sonnenfeld, D., & Mol, A. (2006). Environmental reform in Asia: Comparisons, challenges, next steps. *The Journal of Environment & Development, 15*, 112-137.

Spaargaren, G., Mol, A., & Sonnenfeld, D. A. (2009). Ecological modernisation: Assessment, critical debates and future directions. In A. Mol, D. Sonnenfeld & G. Spaargaren (Eds.), *The ecological modernisation reader: Environmental reform in theory and practice* (pp. 501-520). London: Routledge.

Stern, N. (2007). *The economics of climate change.* Cambridge: Cambridge University Press.

Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory*. United Kingdom: SAGE Publications, Inc.

Strietska-Ilina, O., Hofman, C., Duran Haro, M., & Jeon, S. (2011). *Skills for green jobs: A global view. Synthesis report based on 21 country studies. Executive summary.* Geneva: International Labour Organisation.

Syndex. (2011). *Initiatives involving social partners in Europe on climate change policies and employment: Summary report for the conference on 1 and 2 March 2011.* Brussels: European Commission.

Thomas, J. (2013). RIO+20: Toward a new green economy — or a green-washed old economy? Retrieved July 5, 2013, from http://grist.org/climate-policy/2011-03-24-rio-20-toward-a-new-green-economy-or-a-green-washed-old-economy/

Traxler, F. (2010). The long term development of organised business and its implications for corporatism: A cross-national comparison of membership, activities and governing capacities of business interest associations, 1980-2003. *European Journal of Political Research, 49*, 151-173. doi:10.1111/j.1475-6765.2009.01851.x

TUC. (2009). *Unlocking green enterprise. A low-carbon strategy for the UK economy.* London: Touchstone Pamphlets.

TUC. (2010). *GreenWorks: TUC GreenWorkplaces project report 2008–10.* London: Trade Union Congress.

TUC. (2012a). Greener deals: Negotiating on environmental issues at work. Retrieved March 16, 2012, from http://www.tuc.org.uk/extras/greener_deals.pdf

TUC. (2012c). About the TUC. Retrieved May 17, 2012, from http://www.tuc.org.uk/the_tuc/index.cfm?mins=2&minors=2&majorsubjectID=19

UK Government. (1999). *White paper: Modernising government.* London: UK Government.

UK POST. (2002). Postnote: Ratifying Kyoto. *UK Parliamentary Office of Science and Technology, April* (176)

UN. (2010). *Disaster risk management: Joint program overview.* Pakistan: United Nations, Pakistan.

UN SDKP. (2013). United Nations sustainable development knowledge platform, major groups. Retrieved May 22, 2013, from sustainabledevelopment.un.org/majorgroups.html

UNCED. (1992). *Rio declaration on Environment and development.* Rio de Janeiro: United Nations.

UNCHE. (1972). *Declaration of the conference on the human environment.* Stockholm: United Nations.

UNCSD. (2012). The future we want. *United Nations Conference on Sustainable Development,* 1-53.

UNEP. (2008). *Green jobs: Towards decent work in a sustainable, low-carbon world. Policy messages and main findings for decision makers.* Nairobi: United Nations Environment Programme.

UNEP. (2011). *Towards a green economy: Pathways to sustainable development and poverty eradication-a synthesis for policy makers.* Nairobi: United Nations Environment Programme.

UNFCCC. (1997). *Kyoto protocol.* Kyoto: United Nations Framework Convention on Climate Change.

UNFCCC. (2007). *Bali action plan.* Bali: United Nations Framework Convention on Climate Change.

UNFCCC. (2010). *Climate change conference in Cancun delivers balanced package of decisions, restores faith in multilateral process.* Cancun: United Nations Framework Convention on Climate Change.

UNFCCC. (2011). *Durban platform for enhanced action.* Durban: United Nations Framework Convention on Climate Change Conference of the Parties (COP 17).

UNFCCC. (2011). Parties and observers. Retrieved April 4, 2011, from http://unfccc.int/parties_and_observers/items/2704.php

UNFCCC. (2013). Principle of common but differentiated responsibilities. Retrieved May 27, 2013, from http://unfccc.int/essential_background/convention/background/items/1355.php

UNFCCC AWG LCA. (2009). *Report of the ad hoc working group on long-term cooperative action under the convention.* (No. FCCC/AWGLCA/2009/17). Copenhagen: United Nations Framework Convention on Climate Change.

UNHLPF. (2013). UN member states begin negotiations on HLPF. Retrieved April 5, 2013, from http://uncsd.iisd.org/news/un-member-states-begin-negotiations-on-hlpf/

University of Edinburgh. (2012). The London smog disaster of 1952. Retrieved March 6, 2012, from http://www.portfolio.mvm.ed.ac.uk/studentwebs/session4/27/greatsmog52.htm

van den Hove, S. (2000). Participatory approaches to environmental policy-making: The European commission climate policy process as a case study. *Ecological Economics, 33*, 457-472.

van den Munckhof, J. (2011). *Lessons from the Dutch experience on retrofitting towards nearly zero energy buildings. How to train the value chain?* Brussels: European Partners for the Environment.

WCED. (1987). *Report of the world commission on environment and development: Our common future.* (No. A/42/427). New York: United Nations.

WEF. (2011). *A profitable and resource efficient future: Catalysing retrofit finance and investing in commercial real estate.* (No. 031011). Geneva: World Economic Forum.

WHO. (2011). *Guidelines on preventing early pregnancy and poor reproductive outcomes among adolescents in developing countries.* Geneva: World Health Organisation.

World Bank. (2013). Defining civil society. Retrieved April 5, 2013, from http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/CSO/0

Worldwatch Institute. (2008). *Green jobs: Towards decent work in a sustainable, low-carbon world.* Nairobi: UNEP/ILO/IOE/ITUC.

WSSD. (2002). *World summit on sustainable development.* Johannesburg: United Nations.

WTO. (2012). *The outcomes of Rio + 20: A seminar hosted by the WTO.* Geneva: World Trade Organisation.

WWF. (2003). *Power switch: Impacts of climate policy on the global power sector.* London: World Wildlife Fund.

WWF. (2011). *EU climate policy tracker 2011 United Kingdom.* Brussels: World Wildlife Fund.

WWF. (2011). *Summary report: EU climate policy tracker 2011.* Brussels: World Wildlife Fund.

Yin, R. K. (1988). *Case study research: Design and methods*. United States of America: SAGE Publications, Inc.

Yin, R. K. (2003). *Applications of case study research*. Beverly Hills, CA: SAGE Publications.

Yin, R. K. (2009). *Case study research: Design and methods* (4th ed.). California: SAGE.

York, R., & Rosa, E. (2003). Key challenges to ecological modernisation theory: Institutional efficacy, case study evidence, units of analysis and the pace of eco-efficiency. *Organisation 7 Environment, 16, No 3*(September), 16 March 2011.

Appendices

Appendix 1: Confederation of British Industries Advocacy on Climate Change

The CBI in its many communications to guide public policy has advocated in favour of the following on behalf of business in the UK:

- International
    - Globally coordinated solutions[17]
    - Global cap and trade scheme[18]
    - Leadership by industrialized countries[19]
    - Investment and innovation in key technologies by industrialised countries[20]
- The State
    - Advocate for international action on carbon[21]
    - Shape EU guidelines
        - to enable member states to protect the competitiveness of industries most at risk of carbon leakage, and then
        - utilize these rules to support UK energy intensive industries[22]

[17] Joint BDI-CBI Statement of Principles on Climate Action April 2010

[18] Green skies ahead: creating a low carbon aviation industry July 2010

[19] Joint BDI-CBI Statement of Principles on Climate Action April 2010

[20] Joint BDI-CBI Statement of Principles on Climate Action April 2010

[21] John Cridland, CBI DG Speech to the CBI Energy Conference 14 June 2011

[22] Protecting the UK's Foundations Aug 11

- Certainty to investors[23]
- Develop a long term carbon management strategy while maintaining economic growth[24]
- Provide certainty in planning[25]
- Effective communication with industry and the community[26]
- Integrated Policy[27]
- Regulate sensitively to enable sustained growth[28]
- Minimise the regulatory burden of multiple climate change policies[29]
- Minimise the regulatory barriers to innovation[30]
- Establish technologies that can add value to the UK economy[31]

- Market mechanisms
  - A carbon price must be embedded in the low carbon strategy[32]
  - Energy intensive industries should be exempted from the carbon price[33]

[23] http://climatechange.cbi.org.uk/reports/risky-business-investing-in-the-uks-low-carbon-infrastructure

[24] http://climatechange.cbi.org.uk/reports/risky-business-investing-in-the-uks-low-carbon-infrastructure

[25] http://climatechange.cbi.org.uk/news/planning-uncertainty-threatens-governments-green-promises

[26] Joint BDI-CBI Statement of Principles on Climate Action April 2010

[27] Back to the answer, making the CRC work March 11

[28] Green skies ahead: creating a low carbon aviation industry July 2010

[29] Carbon reduction commitment-CBI consultation response

[30] Pulling ahead: innovating for low-carbon leadership (July 09)

[31] Pulling ahead: innovating for low-carbon leadership (July 09)

[32] CBI DG speech to the CBI Energy Conference 2011

[33] CBI Report: Protecting the UK's foundations

- A carbon floor price must not be allowed to put UK industry at a competitive disadvantage[34]
- Cap and trade can reconcile growth with emissions targets[35]
- Emissions trading is not applicable to the whole economy[36]
- Establish the Green Investment Bank to support industrial efficiency programmes[37]

- Energy Policy
  - Develop low carbon heat and bio energy strategies[38]
  - The energy mix must include new nuclear power stations as well as CCS[39]
  - Security of energy supply and industrial competitiveness must be assured
  - Accelerate investment in the grid[40]
  - The public estate, including schools and hospitals, should commit to procure heat and cooling services from district heating networks[41]
- Industry Policy
  - Focus on priority technology families to maximise UK strengths[42]
  - Develop the conditions to allow business to invest[43]

---

[34] CBI DG speech to the CBI Energy Conference 2011

[35] Green skies ahead: creating a low carbon aviation industry July 2010

[36] CBI written evidence to the House of Commons Env Audit Committee March 09

[37] CBI DG speech to the CBI Energy Conference 2011

[38] http://climatechange.cbi.org.uk/reports/risky-business-investing-in-the-uks-low-carbon-infrastructure

[39] http://climatechange.cbi.org.uk/reports/risky-business-investing-in-the-uks-low-carbon-infrastructure

[40] Decision time: driving the UK towards a sustainable energy future July 09

[41] The Heat is on: Delivering an integrated heat policy Sept 10

[42] Pulling ahead: innovating for low-carbon leadership (July 09

[43] Pulling ahead: innovating for low-carbon leadership (July 09

- Embrace innovation to drive further business success[44]

- Waste Policy
  - Allow the market to decide the most cost effective technology option[45]
- Reporting and measurement
  - Climate exposure should be clearly identified and included in corporate reporting
  - Government reporting guidelines should be based on the Greenhouse Gas Protocol[46]
  - Consistency and transparency in reporting is essential[47]
- Energy Efficiency
  - Display energy certificates could be a tool for helping business reduce emissions[48]
  - Create a one stop advice service to encourage better energy management in buildings
  - Assess the cost benefit of district heat networks[49]
  - Roll out smart meters[50]
  - Improve energy performance of existing homes[51]
  - Provide guidance to landlords and permit CRC allowance transfers between landlords and tenants[52]
- Transport:
  - Car CO2 limits[53]
  - Implement biofuels sustainability criteria

---

[44] Pulling ahead: innovating for low-carbon leadership (July 09

[45] Going to waste: making the case for energy from waste October 10

[46] All together now: A common approach to GHG emissions reporting May 09

[47] CBI comments on Governments carbon action plan March 11

[48] CBI response to the governments consultation on Display Energy Certificates May 10

[49] The Heat is on: Delivering an integrated heat policy Sept 10

[50] Tackling climate change closer to home Feb 2010

[51] Tackling climate change closer to home Feb 2010

[52] Carbon reduction commitment-CBI consultation response

[53] Tackling climate change closer to home Feb 2010

Appendix 2: Trade UniOn Congress Advocacy on Climate Change

Like the CBI, it doesn't have a clear stated policy, and much of its public comment is a response to an issue of the day. However, there are some clear issues that emerge as the direction the TUC is advocating:

- Government commitment to delivery of environmental policy
    - Business needs to be convinced the emphasis on a green economy will endure
    - Emissions targets need to be clear and firm
- A central role for the state in stimulating the green economy
    - Inclusion of environmental criteria in public procurement decisions
    - Commitment to incentives that encourage the uptake of green products and services
    - Provision of green information to consumers
    - Roll out of smart meters
    - Intervene where the market is not delivering and optimal environmental solution
    - Where necessary regulate to require environmental change to stimulate green growth
- Increased support for innovation and research & development
    - Give certainty to green innovators ad investors
    - Use forward commitment procurement schemes to stimulate innovation
- Ensuring we have the necessary skills[54]
    - Anticipate future skills needs and intervene to ensure they are met
    - Develop a skills strategy to support the transition to a green economy

[54] Unlocking the green enterprise: A low carbon strategy for the UK economy 2009

- Renewable energy: wind, wave and tidal power, domestic solar power, biomass and other systems supported by effective policies such as the feed-in tariff.
- Investment in clean coal and gas power through new technologies like carbon capture and storage.
- New nuclear power stations.[55]
- Improving business efficiency and building positive workplace relations through union 'GreenWorkplace' projects is an expanding area of union influence.[56]
- A 'just transition' that seeks to ensure a shift towards a low carbon economy that is fair and equitable for all.[57]
- Environmental improvements can make workplaces healthier, safer, and less stressful and more comfortable places to work by maximising natural daylight, improving heating and ventilation controls and air quality.
- Union involvement in the environmental agenda can bring new members and reps into the union, attracting a more diverse membership.[58]
- Trade unions are also recognising the need to join forces with civil society in a joint call for green and decent jobs with 'Alliances for a Green Recovery' being the subject of the 2010 TUC Climate Change Conference.[59]
- Statutory rights for unions representatives for time off[60]

---

[55] http://www.tuc.org.uk/industrial/index.cfm?mins=83&minors=18&majorsubjectID=8 TUC website Energy page 20 March 12

[56] Tackling Climate Change - A new role for trade unions in the workplace? TUC Website 13 Feb 12

[57] Tackling Climate Change - A new role for trade unions in the workplace? TUC Website 13 Feb 12

[58] Tackling Climate Change - A new role for trade unions in the workplace? TUC Website 13 Feb 12

[59] Tackling Climate Change - A new role for trade unions in the workplace? TUC Website 13 Feb 12

[60] Eurofound reference

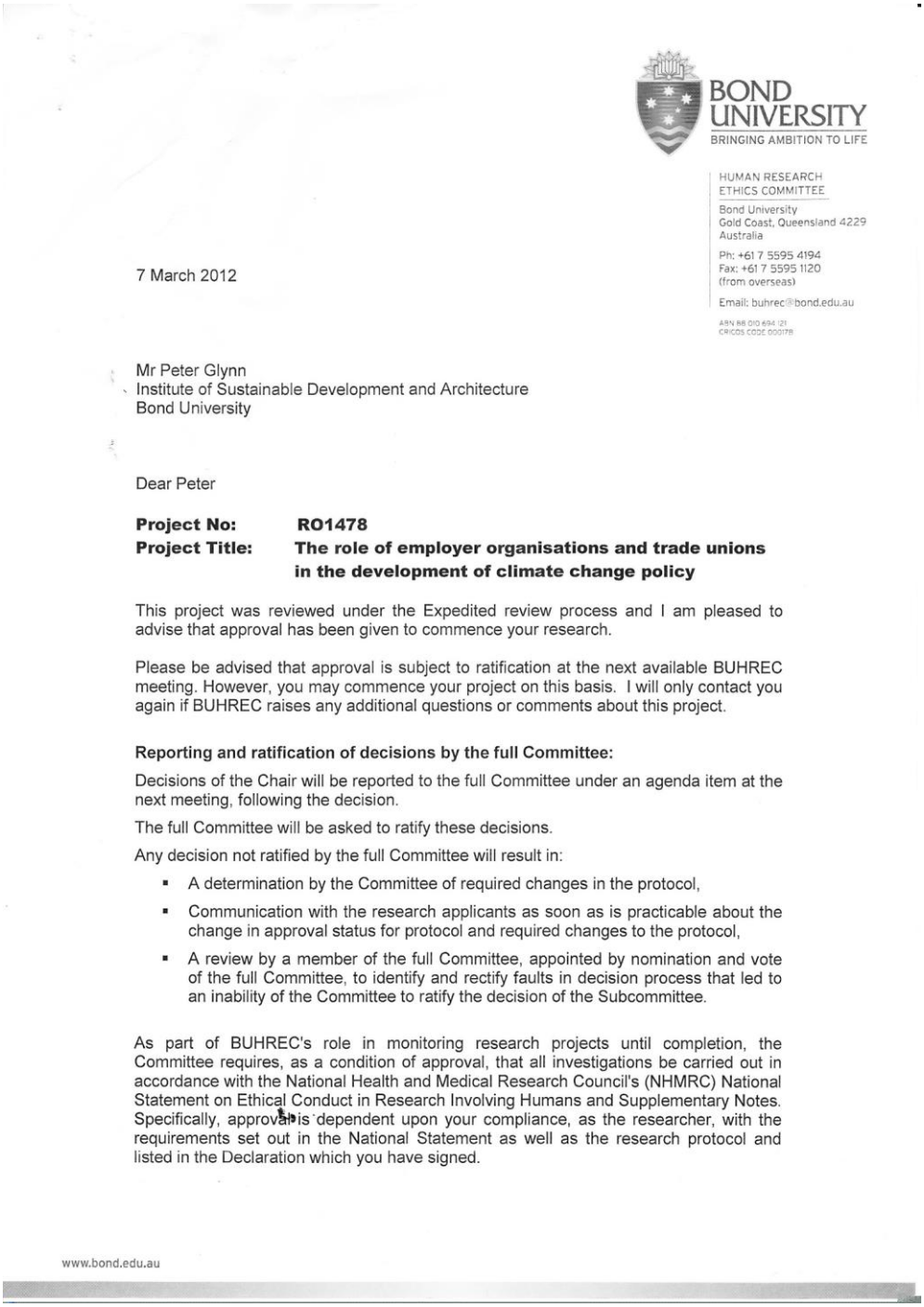
Appendix 3: GGGI set of diagnostic indicators for assessing country sustainability in green growth (GGKP 2013)

Dimension	Themes	Indicators
Country profile	Demographic	Population (65 years of age and above, percentage)
		Population growth rate
	Geography	Land area
		Arable land
		Population density
	Institutional	Net Official Density Assistance (ODA) received
		Intentional homicides
		Corruption index
		Current account balance
		Remittances
Well-being (human)	Poverty	GINI index
		Proportion of population below $1 per day (PPP int $)
		Employment to population ratio (15 years of age and above)
		Literacy rate, adult total (15 years of age and above)
	Access	Access to electricity
		Access to improved water source
		Proportion of the population with access to improved sanitation, total
		Water coverage (access to tapped water within the service area)
		Sewage coverage (access to sewerage system within the service area)
	Health	Life expectancy at age 60
		Mortality rate under five years old
		Hospital beds

		Malnutrition prevalence (underweight)
		Population living on degraded land
	Education	Primary school enrolment
		Secondary school enrolment
		Tertiary school enrolment
		GDP (PPP)
Economy	Income	GDP per capita (PPP)
		GDP growth
		Agricultural; manufacturing; service share
		International tourism, receipts
	Industry	Foreign direct investment, net flows
		Road density
		Road, paved
	Infrastructure	Cellular subscribers
		Internet users
		Material consumption
		Generation of waste
	SCP	Ecological footprint
		Energy supply (total primary energy supply)
		Energy consumption (total final consumption)
Resources	Energy	Energy intensity
		Energy use per capita
		Energy generated using non-fossil fuel
	Water	Annual freshwater withdrawals, total
		Annual freshwater withdrawals, total
		Water use intensity
		Water scarcity index
		Water stress index

	Fishery	Total fisheries production
	Forestry	Forest area
		Deforestation
		Change in forest area
Climate and air	GHG emission	CO_2 emission
		CO_2 emission per GDP
		CO_2 emission per capita
		GHG intensity
	Air emission	NOx emission per capita
		SOx emission per capita
	Vulnerability	Droughts, floods, extreme temperatures
		Vulnerability index
Ecosystem	Biodiversity	Endangered species
		Terrestrial and marine areas protected to total territorial areas
		Living planet index
		GEF benefits index for biodiversity
	Ocean	Coral reef
		Marine area protected
		Mangrove

Appendix 4: Ethical clearance



BOND UNIVERSITY
BRINGING AMBITION TO LIFE

HUMAN RESEARCH
ETHICS COMMITTEE
Bond University
Gold Coast, Queensland 4229
Australia
Ph: +61 7 5595 4194
Fax: +61 7 5595 1120
(from overseas)
Email: buhrec@bond.edu.au
ABN 88 010 694 121
CRICOS CODE 000178

7 March 2012

Mr Peter Glynn
Institute of Sustainable Development and Architecture
Bond University

Dear Peter

Project No: **RO1478**
Project Title: **The role of employer organisations and trade unions in the development of climate change policy**

This project was reviewed under the Expedited review process and I am pleased to advise that approval has been given to commence your research.

Please be advised that approval is subject to ratification at the next available BUHREC meeting. However, you may commence your project on this basis. I will only contact you again if BUHREC raises any additional questions or comments about this project.

Reporting and ratification of decisions by the full Committee:

Decisions of the Chair will be reported to the full Committee under an agenda item at the next meeting, following the decision.

The full Committee will be asked to ratify these decisions.

Any decision not ratified by the full Committee will result in:

- A determination by the Committee of required changes in the protocol,
- Communication with the research applicants as soon as is practicable about the change in approval status for protocol and required changes to the protocol,
- A review by a member of the full Committee, appointed by nomination and vote of the full Committee, to identify and rectify faults in decision process that led to an inability of the Committee to ratify the decision of the Subcommittee.

As part of BUHREC's role in monitoring research projects until completion, the Committee requires, as a condition of approval, that all investigations be carried out in accordance with the National Health and Medical Research Council's (NHMRC) National Statement on Ethical Conduct in Research Involving Humans and Supplementary Notes. Specifically, approval is dependent upon your compliance, as the researcher, with the requirements set out in the National Statement as well as the research protocol and listed in the Declaration which you have signed.

www.bond.edu.au

Should you have any queries or experience any problems, please liaise directly with the Ethics Officer early in your research project: Telephone: (07) 559 54194, Facsimile: (07) 559 51120, Email: buhrec@bond.edu.au

We wish you well with your research project.

Yours sincerely

Dr Mark Bahr
Chair